Research Studies - 3.

nstitutional Costs of University ducation

A Study of Costs & Efficiency of Indian University System

.D. SHARMA

esearch Cell in Economics of Education
SOCIATION OF INDIAN UNIVERSITIES

FOREWORD

This pioneering study by G.D. Sharma attempts to examine the structure and unit costs of university education. These costs are examined in terms of teaching inputs, student welfare, administrative and supporting services. In addition, capital costs are also studied and these are examined in terms of buildings, equipment and machinery and library services. Not only that, a comparison of structure and unit costs is drawn between mainstream and professional universities and also in terms of residential, affiliating and centrally financed universities.

The impulse for doing so comes from the fact that after having enjoyed the best of support for over a quarter century higher education has now entered a phase where funds are not going to be available so easily as they were so far. Of the three sectors of education-primary, secondary and tertiary — it was at the tertiary level that the greatest expansion took place. Whether it was at the central or the state level funds were available aplenty and university and professional education enjoyed what is usually known as the boom period. Now that the situation has changed, it becomes more important than ever before that we should study how these funds are being spent and if they can be spent differently and to better advantage. The issue of efficient use of scarce resources thus cannot be evaded any longer.

Some of the findings of this study have disturbing implications. For instance, in most universities more resources are being spent on administrative and supporting services than on teaching and research. And this is so even after the recent revision of the scales of pay. People generally believe that it is the teaching costs which are higher. Actual analysis however tells a different story. Should this be so? Has this come about because we planned it this way or has this come about without our knowing it? Has this come about because the pressures of the market place are so strong that the universities cannot resist them? One can ask any number of questions but there is no getting away from the fact that administrative costs are higher than they have been believed to be all these years.

A related question to ask is if it is possible to lay down any guidelines in this behalf. Can these be laid down in the abstract or in relation to the character of each university? It is more or less for the first time that these questions are being posed. If we can find answers to them within the next couple of years this study would have justified itself.

Nothing is so rare in the field of higher education as 'cost consciousness'. No body seems to ask where do funds come from and to what use they are put. All these years everyone has taken it for granted that one had only to ask and the requisite funds would be forthcoming from some source or the other. This is certainly not true of some the States of the Union. Indeed the situation in those States is at the other extreme. unds have been scarce for those universities as they have been plentiful in some of the ates and some of the Central universities. What is stated above in respect of more nds being spent on administrative than on the teaching and research side is however qually applicable to universities where funds have been short.

There are a number of other things that can be said to commend the study to the ttention of those interested in the economics of education. In a foreword all that one does to call attention to the importance of the study. For the rest those interested should nd out for themselves what this piece of analysis has to say in regard to the economies f scale, size and distribution of enrolment, location of universities and a dozen other elated issues.

ew Delhi

arch 28, 1980

Amrik Singh
Secretary
Association of Indian Universities

PREFACE

In the last few decades the state's role as provider of welfare to the people has reased. Developing countries also allocate increasing resources for various public vices to their citizens. But because of their low level of development they are find- it difficult to increase linearly the allocation of resources for some services.

Since public services are not subjected to the price mechanism, the question of efficient use of resources has largely remained unattended. Hardly any attempt is e to work out alternative methods of providing services where the unit cost of pro- ing them is least.

This also holds true for education services, which are largely provided by the ernment. The alternative for the price mechanism to achieve efficiency in use of ources is internal evaluation of a system through the study of the cost-effectiveness the system. This could not be done in the past because the question of accountability the system had not been raised so as to invite the attention of the general public. In t, there is a lack of cost consciousness among the people.

This study attempts to examine the structure and unit costs of education in ia. The analysis of structure and unit costs is presented for general and profession- universities, and within general universities according to residential, affiliating and ntral universities. The study also examines the unit operating cost of university ucation and its relation to enrolment. One of the important findings of the study is t most of our higher education system is operating at an inoptimal level, and this lls for remedial action.

I am grateful to Dr. Amrik Singh for going through the draft and offering some luable suggestions.

The data used in this study are collected from the records of the University nts Commission. Our thanks are accordingly due to Mr. S. Vishwanath and the ff of UGC for their co-operation and making available to us necessary data from the mission's records.

I wish to express my thanks to Miss Mridula Saxena, Miss Manju Sharma, ss Manju Aggarwal, Mr. Pawan Kumar Jain, Mr Ajay Kumar Rath, and Mr Rakesh ndra for providing research assistance, Mr. V.K. Chugh for secretarial assistance, . Jagdish Lal Chopra for typing the manuscript and Mr. Vinod Kumar for layout and posing it on an electric typewriter.

We thankfully acknowledge the financial support of the Ministry of Education Culture for this work.

Delhi
h 17, 1980

G.D. Sharma

of the States of the Union. Indeed the situation in those States is at the other extreme. Funds have been scarce for those universities as they have been plentiful in some of the States and some of the Central universities. What is stated above in respect of more funds being spent on administrative than on the teaching and research side is however equally applicable to universities where funds have been short.

There are a number of other things that can be said to commend the study to the attention of those interested in the economics of education. In a foreword all that one does is to call attention to the importance of the study. For the rest those interested should find out for themselves what this piece of analysis has to say in regard to the economies of scale, size and distribution of enrolment, location of universities and a dozen other related issues.

New Delhi

March 28, 1980

Amrik Singh
Secretary
Association of Indian Universities

CONTENTS

Page No.

Chapter I 1

INTRODUCTION

Chapter II 19

STRUCTURE OF COSTS

Chapter III 43

UNIT INSTITUTIONAL COSTS

Chapter IV 75

ECONOMIES OF SCALE & MINIMIZATION OF UNIT COSTS

Chapter V 87

POLICY IMPLICATIONS & SUGGESTIONS

SELECTED BIBLIOGRAPHY 101

LIST OF GENERAL UNIVERSITIES 103

LIST OF PROFESSIONAL UNIVERSITIES 105

CHAPTER I

INTRODUCTION

Why Study Cost

Every modern government spends a great amount of its resources for provision of a number of social/public services. In the last few decades the need for provision of these services has increased particularly because the state is being viewed as a welfare state. The Wagner's[1] law of increasing state activities has been experienced in most parts of the world more particularly the developing part. The pressure of demand for the provision of more and better public services is still increasing. This is firstly because of the increasing consciousness among the people about the state's role as a welfare state, and, secondly, because in most of the developing countries the level of these services is relatively much lower than the demand. Hence, the pressure is felt more acutely. Also, in the developing countries the individual's capacity for paying for the services is low and therefore they always look at the state to fulfil their needs. The governments of developing countries, therefore, are required to spend more resources for providing these services.

But the governments of developing countries are hard pressed for resources. The resources available with them are relatively scarce. The potentiality for mobilizing more resources is limited because of the low level of development.

Government in these countries are often faced with a vicious circle of fulfilling he aspirations of the people which necessarily require more resources, but greater resources cannot be had because of the low level of development.

The situation becomes all the more difficult because these governments hectically allocate more resources in an attempt to linearly expand certain services. However, after sometime they realise that their power to expand has almost reached stage where further allocation becomes impossible. This is further complicated by he fact that very little attention is paid particularly in developing countries to working ut the short and long-term cost of provision of these services and planning for alloation of resources. In fact, hardly any attention is paid to planning alternative methods of provision of these services which might be less costly. The consequence is that their desire to fulfil the needs of the people becomes self-defeating in course of time.

---

[1] See Adolph wagner, Finanzwissenschaft (3d ed. Leipzig, Winter, 1883), 1, 63, and Grundlegung der politischen Dekonomie (3d ed. Leipzig, Winter 1892-94), pp. 892-906. See also Herbert Timm, "Das Gesetz der Wachsenden Staatsausgaben," Finanzarchiv, N. F., 21 (1961), 201-47.

This has exactly been the experience of most developing countries. India is no exception to it. The phenomenon described above holds true of many public services and not any the less of education which is mainly being provided by the State and Union Governments. When the linear expansion of Education, particularly higher education, has almost come to a halt because of scarce resources, a pertinent question that arises is, how with the available resources better education can be provided. A broader question in these days is, how efficiently are the resources allocated to higher education utilised? The efficiency could be seen in terms of cost of provision of public services on the one hand and the results that are obtained from the same on the other hand i.e. cost-effectiveness of higher education. It is here that the need for a study of the cost of higher education arises.

Some Cost Studies - An Over View

It is precisely because of the strain on financial resources that could be made available for education and the desire to provide better education that the cost study attracted the attention of governments and economic institutions in various countries. One of the main findings of the Education Commission in India was that the available facilities in education were being under-utilised. The fuller utilization would reduce the cost of education. Under the auspices of the International Institute of Educational Planning, Coombs and Hallak[2] carried out an international comparative study on management of educational costs, where the attention was focused on (i) how costs of education in various countries have behaved and what lessons could be drawn from their experiences; (ii) how to reduce the cost of education so as to use available resources to provide for more and better education. How such estimates could be used for effective educational development planning. Some conclusions from the experiences of various countries in this study may be permitted here. In the words of Coombs, and Hallak:

1. A developing nation that accepts a well-intentioned gift of an expensive new educational facility without first checking what it will cost annually in local resources to operate the new facility may later find its whole educational programme distorted and disadvantaged by this generous gift.

2. A university with limited resources that proliferates its programme offerings in the name of meeting "International Standards" or which

---

[2] Coombs, Philip H and Hallak Jacques, Managing Educational Costs, Oxford University Press, New York, 1972.

opens its doors indiscriminately to all secondary school graduates in the name of social justice can soon find itself producing quite the opposite of excellence and justice.

3. Educational leaders who try to meet the need for innovation by superimposing a new technology (such as instructional television) upon the old teaching-learning process will find their expenses increased by the full cost of the added technology, probably without a proportionate improvement in learning results.

They further state that this brings us to two basic truths. The first truth is that any measure taken to improve educational quality or opportunity without prior examination of its cost consequences can easily prove self-defeating. The second truth is that, in most situations, costs have little meaning or value until they are set against educational results and the results are weighed against the objectives. Costs, in other words, are only one side of the equation that links educational resource inputs to educational outputs and benefits. It is this equation as a whole - and this broader, more systematic way of looking at an educational process - that enables educational planners, evaluators, and managers (broadly defined to include teachers) to improve the efficiency and productivity of any education activity.

With a similar focus another study under the auspices of OECD was conducted by the Centre of Educational Research and Innovation[3] on 'Costs and Potential Economies in the Institution of Higher Education'. This study was also directed to examine the cost of various educational programmes and explore the potential economies which could be obtained by efficiently managing the institution of higher education. Yet another study by Maynard James[4] on 'Some Micro-Economics of Higher Education - Economies of Scale' attempts to examine the long and short run cost curves in operation of higher education. He attempted to find out the size of enrolments where the cost of operating Institutions of higher learning is the least.

In India Lakadawala and Shah[5] carried out a study on 'Optimum Utilization of Educational Expenditure in Gujarat'. The focus of the study was again on exploring the possibility of potential economies in educational expenditure in Gujarat and suggesting optimum utilization of educational expenditure in this State. One of the important findings of the Lakdawala and Shah's study was that there is sort of 'U' shaped cost curve in the working of the colleges of Gujarat. The cost being low at enrolment size of 900 students. This finding was very similar to that of the Education Commission where optimum size was considered at about 1000 enrolment. A study conducted by this author has also pointed out that some economies can be effected by restructuring the educational programmes presently run by the colleges.[6] The Indian Council of Social Science Research also commissioned studies of four universities, namely, Bombay, Calcutta, Karnataka and Rajasthan[7] The number of studies conducted in this area in India are not many[8]. However institutions not only in developing but developed countries are also not, as Coombs and Hallak say, very "Cost Conscious".[9]

---

[3] CERI (Centre for educational research and innovation), Costs and Potential Economics, OECD, 1972.

[4] Maynard James (1971), Some Micro-Economics of Higher Education, Economies of Scale, University of Nebraska Press, Lincoln, 1971.

[5] Lakdawala, D. T. and Shah, K.R., Optimum Utilization of Educational Expenditure in Gujarat (Monograph Series 5), Sardar Patel Institute of Economic and Social Research, Ahmedabad, 1978.

The focus of the study is to bring about a kind of 'Cost Consiousness' among the educational planners and policy makers as well as managers of institutions of higher education. It is addressed to examining the cost of education in Indian universities with a view to evaluating the cost effectiveness of resources put into higher education. An analytical study of cost in Indian Universities separately for general and within general affiliating and residential type of universities, and by professional and central universities is also attempted

Cost to whom and Cost for What

In the context of study of costs two important questions arise. They are (i) cost to whom? and (ii) cost for what? These very questions also hold true of the cost of education studies. Whether it is a cost to the institution which provide instruction to the students and or cost to the students who spend some money in the process of obtaining education and also forego some earnings which they could have earned had they been in some gainful employment during the period of their studies. Whether it is a cost to the society who spends some resources for providing education to the citizen and also for goes some part of National Product which these people could have added had they been in jobs during the period of their studies. These are valid questions and need to be posed before setting out to study cost of education. This study addresses itself to analysing the cost to the institutions of higher education i.e. universities for providing instructions to the students and other educational facilities. Thus the scope of this study is limited to the cost to the institutions for providing education.

---

[6] Sharma, G.D. Unit Cost of Education in a College of Delhi University, University News, Vol. No. XVII NO 8, April, 15, 1979.

[7] These studies were conducted by the respective universities. References to the same are given in Reference Index.

[8] A recent survey on this subject undertaken by AIU revealed that studies on unit cost of education are few. This is an area which needs to be explored. The importance of such studies arises from the fact that they help in (a) institutional planning (b) proper allocation of resources (c) checking the wastage (d) providing an indicator for grants-in-aid (e) determining the size of the class/department where the unit cost is the least.

[9] "......... educational systems and institutions even in most highly industrialized countries have not been very 'cost conscious' in the sense of analysing their cost for the purpose of evaluation, planning policy making and general improvement in their cost effectiveness". (Managing Educational Cost by Philiph Coombs and Hallak, New York, Oxford University Press, 1972, pxii).

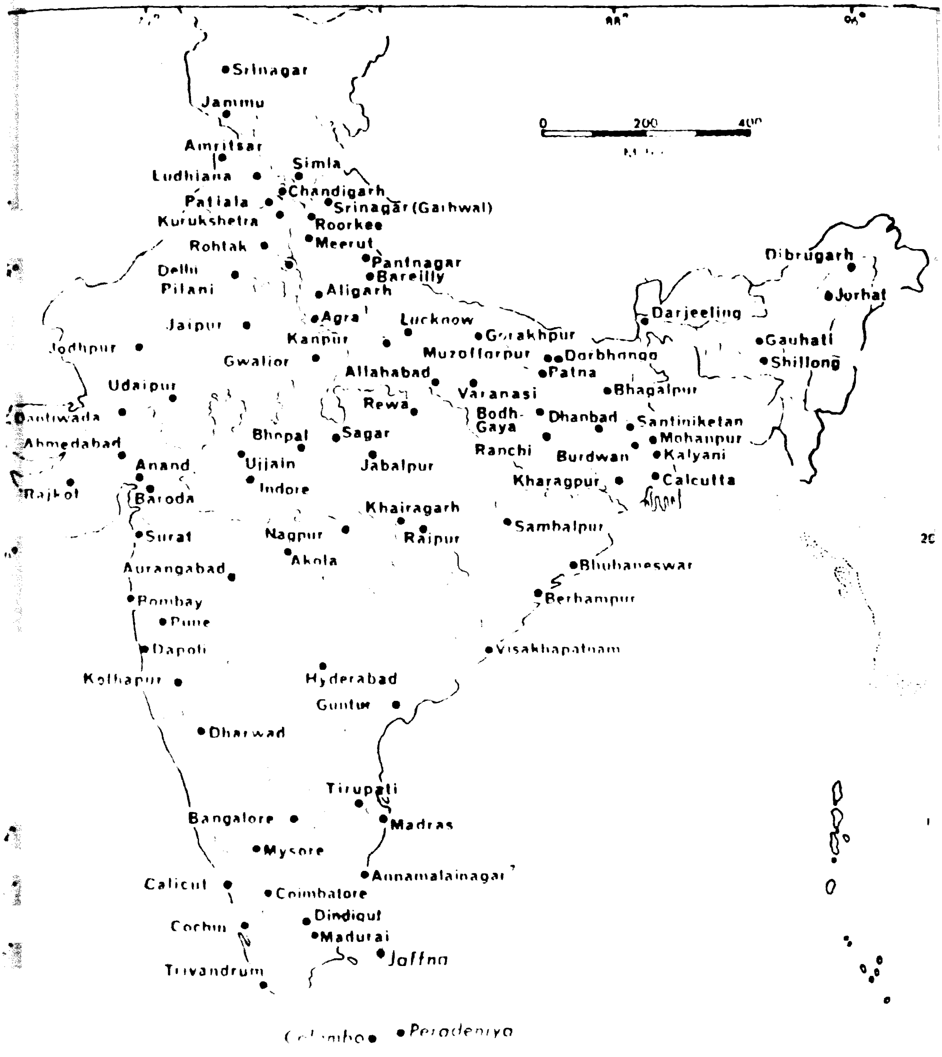
Before we attempt to analyse the cost of education in Indian universities, it might be pertinent to briefly describe the system of university education in India as obtaining today.

System of University Education

There are 105 universities and 10 deemed to be universities spread throughout the country (see map 1). The system is operating with 2400 departmental units and 305 constituent colleges and 4267 affiliated colleges. Of the total departmental units 64 per cent cater for Arts, Science and Commerce education and the 36 per cent for professional education. The proportions of Arts, Science and Commerce education and professional education for constituent and affiliated colleges works out to be 54 and 46; and 73 and 27 per cents respectively. Thus around threeforth of the system cater for arts, science and commerce education and one third for professional education (For details see table No. 1. 1, 1.2 and 1.3). Broadly speaking, postgraduate and research education is provided in the departmental units and in some of the constituent colleges whereas affiliated colleges largely cater for undergraduate education.

The story of the present size of university system is almost a century and two decades old. The university system started in India after the mid 19th century and till the end of 19th century there were only 4 universities. Two dozen universities were added in another half century i.e. till the mid 20th century. It was only after India got independence that an increase in number of universities began. Universities specifically catering to professional education were also established. Fifties and sixties experienced a rapid growth. In 1950's 14 general and 5 professional universities were added. That in 1960's 29 general and 14 professional universities were established. Another 13 general and 10 professional universities were added in the 70's. Thus the story of growth of universities catering to specific professional education is rather of recent date. Types of specific education provided by these universities can be counted on finger tips. In all 20 universities are catering for

Map-1



Adopted from Association of Commonwealth Universities Yearbook 1980.

Table 1.1

Distribution of teaching department Units; Constituent and Affiliated Colleges Units, by general and Professional types, University system, India, 1977-78

Types	Arts, Science, Commerce	Professional	Total
1. Departmental Units	1528	872	2400
	(63.67)	(36.33)	(100)
2. Constituent College Units	164	138	302
	(54.30)	(45.70)	(100)
3. Affiliated College Units	3114	1153	4267
	(72.98)	(27.02)	(100)
Total	4806	2163	6969
	(68.96)	(31.04)	(100)

Percentage are given in brackets.

Table No. 1.2

Distribution of Departmental Units by Faculty, University System, India, 1977-78

	Departmental	
	No.	Units
Arts	899	37.46
Science	577	24.04
Commerce	52	2.17
Profession	275	11.46
Medical	164	6.83
Engineering	162	6.75
M. B.A.	16	0.67
Others	227	9.46
Law	28	1.16
Total	2400	100.00

Table No. 1.3

Distribution of College Units, by Faculty, University System, India, 1977-78

Faculty	Constituent Colleges		Affiliated Colleges	
	Units	Percentage	Unit	Percentage
Engineering/Technology	25	18.12	87	7.55
Medical	7	5.07	110	9.54
Unani/Ayurvedic	3	2.17	107	9.28
Dental	-	-	9	0.78
Pharmacy	-	-	10	0.87
Nursery	1	0.72	10	0.87
Agriculture	46	33.33	7	0.61
Veternary Science	22	15.94	1	0.09
Law	16	11.59	122	10.58
Teacher Training	12	8.70	305	26.45
Music	4	2.90	100	8.67
Oriental Learning	-	-	268	23.24
Physical Education	2	1.46	17	1.47
Total	138	100.00	1153	100.00

Agricultural Education, 4 for Technical Education, 2 Sanskrit one for English & Foreign Languages, one Music and Culture, one Social Sciences and one medical education. Although most of the universities provide for specific professional education through their respective departments or constituent colleges yet the number of universities with specific professional education is very small. This broadly describes the structure of the university system in India as obtaining today. The system is further supplemented by 12 institutions of higher learning which are not termed as universities but viewed as institutions of national importance. See table 1.4

It might be pertinent to see how a university functions so as to understand the structure.

Structure of the University

Historically speaking Indian universities were established on the model of university of London and therefore mainly functioned as examining bodies for affiliated colleges. Later on the teaching activity was added. Today the universities provide:

i) educational programmes policy for their own departments as well as constituent and affiliated colleges;

ii) instructions for postgraduate and research degrees; some universities also provide under graduate education in their campuses[10];

iii) facilities for research and undertakes research studies;

iv) library, laboratory, computer and other complementary services;

v) sports and games, recreation, health, hostel and other facilities.

vi) function as examining bodies for their departments and constituent, affiliated colleges.

The Vice-Chancellor with the help of the executive and academic councils draws up and implements education policies and programmes, manages the campus and provides academic leadership. The Registrar and other administrative units provide personnel and other supporting services to departmental units and affiliating services to colleges, manages examinations etc. Teaching departments mainly function for providing instruction and research guidance. However, each of the departments/faculties has some administrative office to cater for the needs of the

---

10. About 25 residential universities also provide undergraduate education.

Table No. 1.4

Growth of General Universities, University System, India 1977-78

	Year of establishment	No. of Universities	Name of Universities
1.	1850-1900	4	Bombay 57; Madras 57, Calcutta 57, Allahabad 87.
2.	1901-1925	8	BHU 16, Mysore 16, Patna 17, Osmania 18, Aligarh 21, Lucknow 21, Delhi 22, Nagpur 23
3.	1926-1950	16	Andhra 26, Agra 27, Annamalai 29, Kerala 37, Utkal 43, Saugar 46, Rajasthan 47 Panjab 47, Gauhat 48, Kashmir 48, Karnatak 49, Roorkee 49, M. S. Baroda 49, Poona 49, Gujarat 50, Sardar Patel 55.
4.	1951-1960	14	S. N. D. T. Women's 51, Vishwabharti 51, Bihar 52, Sri Venkateswara 54, Jabalpur 55, Jadavpur 55, Kurukshetra 56, Vikram 57, Gorakhpur 57, Marthwada 58, Bhagalpur 60, Burdwan 60, Kalyani 60, Ranchi 60.
5.	1961-70	29	Gurukul Kangri 62, Jamia Millia 62, North Bengal 62, Ravindra Bharati 62, Magadh 62, Shivaji 62, Udaipur 62, Punjabi 62, Jodhpur 62, Gujarat Vidya Peeth 63, Bangalore 64 Indore 64, Jiwaji 64, Ravi Shankar 64, Kanpur 65, Meerut 65, Dibrugarh 65, Saurashtra 65, South Gujarat 65, Madurai 65, Berhampur 67, Sambalpur 67, Delhi 68, Calicut 68, Avadesh Pratap 68, Jammu 69, Guru Nank 69, Himachal 70, Bhopal 70.
6.	1971-77	13	Cochin 71, L. N. Mithla 72, N.E.H.U. 78, Garwal 73, Kumaon 73, Kashi 73, Hyderabad 74, Bundelkhand 75, Rohil Khand 75, Nagarjun 76, Kakatiya 76, M.D. Rohtak 76.

Contd. . Table 1.4

Growth of Professional Universities, University System, India, 1977-78

up during	Total No.	No. of universities by types of professions		Names of the universities
1951-60	5	Agricultural	2	Indian Agri. Institute 58, G. B. Pant Agri. 60;
		Technical	1	Indian Science Institute 53.
		Cultural (Arts etc.)	1	Indra Kala Sangit 56
		Sanskrit	1	Sampurnand 58
1961-70	14	Agricultural	9	Orissa Agri 62, Punjab Agri. 62, Andhra Agri. 64, University of Agri. Sciences 64, J. N. Krishi 64, Assam Agri. 68, Punjabrao Krishi 69 Rajindra 70, Haryana 70
		Technical	2	BITS 64, Indian School of Mines 67
		Sanskrit	1	K. S. Darbanga Sanskrit 61
		Social Science	1	Tata Institute of Social Science 64
		Medical	1	Gujarat Ayurveda 68.
1971-77	11	Agricultural	9	Kerala Agri. 71, Tata Nagar Agri. 71, Gujarat Agri. 72, Konkan Krishi 72, Marathwada Agri. 72, M. Phula Krishi 73, C. S.A. Agri. 74, N. D. Agri. & Tech. 74, Bidhan Chandra Krishi 74.
		Technical	1	J. N. Technology 72.
		Languages	1	Central Institute of English & Foreign Languages 73.

staff and students and for managing admissions. The university functions as well-knit unit in the form of the campus. It also provides various infrastructure facilities and services such as maintenance, works, university press etc. Thus while drawing conclusions from the analysis of the cost of the university system the structure of universities as obtaining in India may be kept in view. This may not always be similar to that observed in other countries. Here a university functions as an independent well-knit unit that provides all the necessary facilities to students and staff within the campus and also some facilities to affiliated and constituent colleges.

Data Limitations

A systematic cost study requires systematic data clearly identifying th activities and the amount of expenditure incurred for them. However, as things obtain today cost figures are not reported according to various activities or functions precisely in the economic sense. There is always some kind of ambiguity about the types of items that could be included under various heads. Besides this, these types of items included under various heads in the university budgets also differ between universities. Nevertheless a broad comparison is possible. Some of the limitations of a specific nature may be mentioned below:

1. Wage Costs

In reporting wage cost aspects where the salary of teaching and non-teaching staff is reported, sometimes their contribution to the provident fund, pension and gratuity are shown under other expenses. Only the sum of salary as paid to the teachers and other staff is given

2. Teaching Material

In the expenses on teaching materials, expenses incurred on items which are directly used as an input in teaching are stated but some of the indirect inputs costs like stationery, water supply, electricity even for laboratory and workshops etc. are reported under other items. This makes a precise study of the costs on all types of inputs for teaching purposes very difficult.

3. Examinations

Since universities conduct examinations for students of their teaching departments and constituent colleges and also for affiliated colleges, the cost of the conduct of examinations needs to be examined in terms of a larger number of students who appear in the examinations than only those who are enrolled in the university departments. Sometimes most of the expenses incurred on examination are reported under this head, but travel expenses paid to the examiners and other petty expenses including general services are mixed up with general expenditure and therefore reported under other expenses. This again makes it difficult to precisely determine the cost of examinations.

4. Library

Under the item of library expenses salaries and other consumable items are included, yet sometimes purchase of books and journals is reported under the recurring expenditure on library services. Sometimes it is shown under non-recurring expenditure, particularly when books and journals are bought under development grants.

Similarly, expenditure on student facilities and hostels are sometimes reported under the specific items and sometimes under the expenses on general staff and other expenditure. One might occasionally find expenditure on fixtures and furniture reported aggregately or under even recurring expenditure.

5. Other Expenditure

Expenses on a large number of items such as stationery, water and electricity and telephone charges, taxes, rents and the items which could not be specified under above activities get reported under this head. As a result the amount of expenditure under this head is usually large.

6. Capital Expenditure

For an economic analysis of capital cost or the cost of infrastructural services the complete data of capital formation over a period of time since the inception of the university, separately indicating the amount of capital formed in each year is required. However, such cost figures are not reported by the university in its annual budget. Under this situation it becomes unrealistic to evaluate the economic use value of capital infrastructure. In such cases only the annual per student capital formation can be measured. It may be pointed out that such figures are not very clearly specified for various activities, say, teaching and non-teaching etc. The study of capital formation under various activities is also therefore precluded. These are some of the data limitations which need to be kept in view while drawing conclusions from the cost figures. These limitations would show that financial management in the universities needs reorienting towards performance and functional budgeting.

Scope of the Study

This study examines institutional costs of university education mainly in university teaching departmental units and in other activities of universities. That is excluding constituent and affiliated college units of the university system. The main focus is on costs in general universities. The costs in professional universities are also discussed.

Since the study pertains to 1974-75--77, universities established in 1974 and in subsequent years are not covered. Thus of the effective number of 76 general universities and 30 professional universities 43 (57%) in 74-75, 56(74%) in 75-76 and 54 (71%) in 76-77 general universities, and 16 (53%) in 1974-75, 9(30%) each in 1975-76 and 76-77 professional universities are covered.[11]

Cost are examined for instructional and supporting services inputs. Costs of capital formation in some items are also examined. Costs figures are discussed in aggregate for India, and by various types of universities.

Period of the Study

Three years period that is 1974-75, 1975-76 and 1976-77 has been considered for the purpose of this study. The choice of this period was dictated by the availability of data. The coverage of a larger period would have been more interesting but this was not possible. From the economic point of view this period started with the end of the fourth plan and beginning of the 5th and the annual plans. This was also the period when the new UGC scales were introduced in many universities.

Sources of Data

The data used in this study are mainly based on the expenditure and income data as supplies by the universities to the UGC and in some cases from university budgets as prepared and printed by respective universities. Complementary data such as enrolment, teachers and colleges, departmental units etc. for the purpose of this study are obtained from various UGC reports and records and other published sources.

---

[11] Our desire to cover a larger number of professional universities was limited by non-availability of data.

CHAPTER II

STRUCTURE OF COSTS

An attempt is made here to examine the structure of costs in Indian Universities. The purpose of such analysis is to evaluate how the total resources of universities get distributed over various activities. A time period analysis also reveals the changes occuring in the distribution of funds among these activities. Comparison of such structures among groups of universities reveals type of activities that receive importance in their working.

The structure of operational costs may be discussed under four broad categories They are:

I. Costs of Teaching Inputs

   1) Wage costs of Teaching Staff;
   2) Costs of Teaching Material;
   3) Costs of Library Services;

II. Costs of Student Welfare

   1) Costs of games and sports and recreation;
   2) Hostel costs;
   3) Subsidy costs;

III. Costs of Supporting Services

   1) Wage Costs of Administrative Staff;
   2) Costs of Other Supporting Services and Consumable Stores;
   3) Costs of Maintenance and Works;
   4) Financial Assistance to Constituent and Affiliated Colleges and other Institutions;

IV. Costs of Evaluation/Examinations

The costs of capital formation are discussed in the following four broad heads:

I) Buildings;
II) Equipments/Machines;
III) Library;
IV) 'Other Items'.

The items under first category represent the costs of direct educational inputs in the form of teachers services, materials used for teaching and library services. The second category shows the amount that goes in facilitating students in pursuit of their studies.

The third one represents the expenses incurred on the working of the university system through administration accounts, maintenance and works and a host of other services rendered to constituent and affiliated colleges. It also includes the costs of electricity, water supply and consumables stores that support education activity.

The fourth category includes costs of evaluation/examination services rendered by the university to the students of departmental teaching units and students enrolled in their constituent and affiliated colleges.

The costs of capital formation are categorised in the above listed items, simply because cost figures are not given by activities.

Structure of Costs

The structures of cost in Indian Universities are discussed separately by operating and capital costs. The structure is also shown from the angle of the total budgets of the universities during the financial years under study. However, attention is focussed on operating and capital costs.

In 1976-77, 77-78 percent of the total university budgets in India is spent on operating expenses and 15-16 percent on capital formation. Four to five percent is spent on scholarships and three to four percent on 'other items' which are not on direct charge of the universities and for which accounts are maintained separately. Please see table No. 2.1

Operating Costs

In the working of the university system there are certain costs, like wages of teaching and administrative staff and costs of supplies, that are committed. They are pre-determinant because of the past decisions. There is little scope for bringing about changes in them during a short period.

The operating costs or recurring costs although by their nature variable are largely casted because of past decisions, yet changes in them occur depending on changes in wage structure and prices of consumable items and supplies. The changes in them can, however, be effected in future, by present decisions based on economic considerations, or with a view to effecting economies in the use of resources. This could be done only if present structure of cost is known to us. Analysis of structure of operating costs is therefore presented here. The structure of costs is discussed separately for teaching inputs; student welfare and for administrative and other supporting services.

Teaching Inputs

Table No. 2.1 reveals that of the total operating budgets of the universities in 1976-77 one third was spent on teaching inputs. The wage costs of teaching staff accounted for 27.25 percent of the operating costs. Teaching material and library services claimed around 4 and 3 percent respectively.

Student Welfare

Of the total operating costs student welfare claimed around three and a half percent. Subsidy cost i.e. scholarships, stipends from the university resources accounted for 1.90 percent, the share of sports games and hostels was 0.63 and 0.99 percent respectively.

Administrative and Supporting Services

The relatively higher proportion of total operating budget was claimed by administrative and other supporting services. Almost half of the budget is devoted to this activity. The wage cost for administrative staff accounts for one fourth of the operating budget. That other consumable stores and supplies for 18 percent. About 6 percent of the operating budget was set aside for giving financial assistance to constituent and affiliated colleges and other institutions.

It may be pointed out that some part of the supporting services like water, electricity, telephone etc. which are accounted under administrative and supporting expenses also help in teaching activity. Nevertheless, administrative and supporting services appear to be an important activity in the university system in India.

Management of Examinations

The management of examinations claimed about one tenth of the operating costs. It may be noted that examination is a type of activity which is generally full cost priced. Therefore, in terms of financial implications effects of cost of examinations in the working of the university is limited.

Structure of Costs-A Time Period Analysis

The structure of costs has experienced little change from 1974-75. The costs of teaching inputs as compared to 1974-75 has increased by three percent approximately. In this the major increase was in wage cost of teachers. This may be partly because of the fact that it was during 1975-76 that the new pay scale for teachers were implemented in many universities. The share of student welfare increased marginally in the year 1976-77 as compared to 1974-75. However, proportion of amount spent on scholarships and stipends as compared to 1974-75 was higher in this year.

The proportion of wage cost for administrative staff also increased by about two percent as compared to 1974-75. Proportion of amount spent on supporting services increased by one per cent. The cost of examinations registered a decline by almost 6 percent. As regards the major activities of importance the structure of costs showed minor changes.

Broadly speaking the amount of resources that are allocated to teaching inputs and student welfare has been relatively less than the amount that goes towards administrative and supporting services. This may be partly because of the fact that the structure of Indian Universities to a large extent is administrative based because of the affiliating nature of universities. Partly because Universities in India have a campus within which all the necessary facilities are provided. To maintain such structure irrespective of other important activities some amount is committed. Hence a larger share is claimed by administrative and supporting services.

It is a different proposition whether all the structure created is fully utilised or remains partly unutilised. Our experience suggests that in many cases such structure is partially utilised. It is necessary to explore what economies can be effected in this field.

Capital or Fixed Costs

In 1976-77 about 15 percent of the total budgets of universities was spent on creating infrastructural facilities of fixed nature. Of the total amount spent on capital assets almost half was claimed by buildings. About 12 percent was spent on library, and 16 percent to buy equipment and machines. The remaining amount was spent on 'other items.'

The time period analysis of pattern of capital costs reveals that proportion of amount spent on construction of buildings was as compared to 1974-75 relatively less in 1976-77 and that resources spent on other items was relatively higher in 1976-77 as compared to 1974-75. This suggests that there has not been any major change in the structure of capital costs. The details of structure of cost by activities and item wise are given in table No. 2.1. Readers may refer to them for greater details.

Table No. 2.1
Structure of Costs - University System, India
1974-75--77

GENERAL UNIVERSITIES

Items of Costs/Years	1974-75		1975-76		1976-77	
	%age to operating costs	%age to grand total	%age to operating costs	%age to grand total	%age to operating costs	%age to grand total
A. OPERATING COSTS						
I. Costs of Teaching Inputs						
1) Wage costs-teaching staff	23.22	19.33	23.91	18.63	27.25	21.12
2) Costs of teaching materials	4.35	3.62	3.35	2.61	4.23	3.27
3) Library costs	3.76	3.13	4.34	3.78	3.02	2.34
TOTAL TEACHING INPUTS COSTS	31.33	26.08	31.60	24.62	34.50	26.73
II. Costs of Student Welfare						
1) Subsidy costs - scholarships, stipends from university sources	0.86	0.72	1.85	1.44	1.90	1.47
2) Games and sports	1.02	0.85	0.78	0.60	0.63	0.49
3) Hostels	1.31	1.09	1.15	0.89	0.99	0.77
TOTAL COSTS OF STUDENTS WELFARE	3.19	2.66	3.78	2.93	3.52	2.73
III. Costs of General Administrative and Supporting Services						
1) Wage costs - administrative staff	23.52	19.59	23.25	18.12	25.33	19.63
2) Costs of consumable stores supplies and other supporting services	16.54	13.78	18.98	14.79	17.81	13.80
3) Costs of maintenance and repairs	1.39	1.16	2.48	1.93	2.31	1.79
4) Financial assistance to colleges/institutions	7.29	6.08	7.50	5.85	6.44	4.99
TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	48.74	40.61	52.21	40.69	51.89	40.27
IV. Costs of Examinations	16.73	13.93	12.40	9.67	10.09	7.82
TOTAL OPERATING COSTS	99.99°	83.28	99.99°	77.91	100.00	77.49

Contd.. Table No.2.1
Structure of Costs - University System, India
1974-75-77

GENERAL UNIVERSITIES

Items of Costs/Years	1974-75		1975-76		1976-77	
	%age to capital costs	%age to grand total	%age to capital costs	%age to grand total	%age to capital costs	%age to grand total
B. COSTS OF CAPITAL FORMATION						
I. Library	11.50	1.51	9.19	1.52	11.84	1.72
II. Buildings	55.96	7.35	50.54	8.41	50.94	7.41
III. Equipments and machines	16.34	2.15	13.72	2.28	15.83	2.30
IV. Other items	16.20	2.13	26.54	4.41	21.38	3.11
TOTAL COSTS OF CAPITAL FORMATIONS	100.00	13.14	99.99*	16.64	99.99*	15.07**
TOTAL OPERATING AND CAPITAL COSTS		96.42		94.55		92.56
C. OTHER COSTS						
I. Subsidy costs - scholarships from sources other than universities		3.22		4.68		4.39
II. Expenses on items for which accounts are separately maintained		0.36		0.76		3.05
TOTAL COSTS		100.00		100.00		100.00
(In lakhs Rupees (0.10 Million))		4859.58		9463.13		11377.89
Number of University Covered		43		56		54
Average budget per university (In lakhs rupees)		113.01		168.98		210.70

* The items may not total upto 100 percent because of fractional differences.

** Items don't add up to the given percentage because in one university only total capital costs are given and break up by items is not provided.

Structure of costs in residential universities

In residential universities in 1976-77, of the total operating costs teaching inputs accounted for 41 percent. In this, the wage cost of teaching staff claimed about 35 percent. Library and teaching material accounted for 3 percent each. Share of student welfare was 4 percent. In this subsidy cost - scholarships, stipends accounted for 1 percent, and games and sports and hostel for 1 and 2 percent respectively. Administrative and supporting services accounted for 46 percent of the budget. The wage cost of administrative staff was around 23 percent. Around 16 percent was spent on consumable stores and supplies and 3 percent on maintenance and repairs. Financial assistance to other institutions claimed around 4 percent. The proportion of amount spent on examination was 9 percent of the total operating budget. See table 2.2

Structure of costs in affiliating universities

In affiliating universities in 1976-77 teaching inputs claimed 34 percent of the operating budget. The share of teaching staff was about 26 percent; Teaching material and library accounted for 4 and 3 percent respectively. Proportion of amount spent on student welfare was $3\frac{1}{2}$ percent. Of this scholarships and stipends accounted for 2 percent, whereas games and sports, hostels for half and one percent respectively General administrative and supporting services claimed little more than half of the operating budget. The wage cost of administrative staff was about 26 percent. Consumable stores and supplies claimed 18 percent. The proportion of amount spent on maintenance and repairs and financial assistance to colleges was 2 and 7 percent respectively. Examinations claimed around 10 percent of the total operating budget. See Table 2.3

Structure of Costs in Residential and Affiliating Universities - A Comparison

The structure of cost in residential type of universities - universities which provide both undergraduate and postgraduate education on their campuses and do not have affiliated and constituent colleges, attached to them - is different from what may be observed in affiliating type and what is observed in the case of general universities. In residential type of universities teaching inputs claim relatively higher proportion of the total operating budget than in affiliating type. This proportion is 41 percent as compared to 34 percent in affiliating type of universities. In this type of universities the amount that goes as wages to teaching staff is also relatively higher. This is about 35 percent as compared to 26 percent in the case of affiliating type of universities. However, the library and other teaching material inputs claim slightly lower share in residential type of universities than in affiliating type. The costs of material inputs in the former being 3 percent and that in latter 4 percent. The cost of student welfare in residential type of universities is around 3 percent which is also more or less similar to what is observed in the case of the other type.

RESIDENTIAL UNIVERSITIES

Items of Costs/Years	1974-75		1975-76		1976-77	
	%age to operating costs	%age to grand total	%age to operating costs	%age to grand total	%age to operating costs	%age to grand total
A. OPERATING COSTS						
I. Costs of Teaching Inputs						
1) Wage costs teaching staff	31.12	24.50	39.69	24.78	34.97	24.35
2) Costs of teaching materials	2.77	2.18	2.61	1.63	3.11	2.17
3) Library costs	4.85	3.81	2.67	1.67	2.88	2.01
TOTAL TEACHING INPUTS COSTS	38.74	30.49	44.97	28.08	40.96	28.53
II. Costs of student welfare						
1) Subsidy costs - scholarships, stipends from university sources	1.13	0.89	1.84	1.15	1.14	0.78
2) Games and sports	1.13	0.89	0.82	0.51	1.05	0.73
3) Hostels	2.03	1.60	0.98	0.61	1.79	1.25
TOTAL COSTS OF STUDENTS WELFARE	4.29	3.38	3.64	2.27	3.98	2.76
III. Costs of General Administrative and Supporting Services						
1) Wage costs - administrative staff	22.53	17.74	22.58	14.09	22.97	16.00
2) Costs of consumable stores supplies and other supporting services	14.99	11.82	11.32	7.07	15.79	11.00
3) Costs of maintenance and repairs	1.85	1.46	2.51	1.57	2.69	1.88
4) Financial assistance to colleges	3.95	3.11	4.36	2.27	4.24	2.96
TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	43.32	34.13	40.77	25.45	45.69	31.84
IV. Costs of Examinations	13.60	10.70	10.62	6.63	9.36	6.50
TOTAL OPERATING COSTS	99.95*	78.70	100.00	62.43	99.99*	69.63

Contd. . Table No. 2.2
Structure of Costs - University System, India
1974-75--77

RESIDENTIAL UNIVERSITIES

Items of Costs/Years		1974-75		1975-76		1976-77	
		%age to capital costs	%age to grand total	%age to capital costs	%age to grand total	%age to capital costs	%age to grand total
B.	COSTS OF CAPITAL FORMATION						
I.	Library	4.70	0.74	6.54	1.61	11.57	1.62
II.	Buildings	23.03	3.62	21.05	5.16	34.02	4.75
III.	Equipments and machines	11.96	1.88	12.46	3.06	23.34	3.32
IV.	Other items	60.29	9.48	59.95	14.72	30.56	4.27
	TOTAL COSTS OF CAPITAL FORMATIONS	99.98*	15.73	100.00	24.55	99.99*	13.96
	TOTAL OPERATING AND CAPITAL COSTS		94.45		86.97		83.59
C.	OTHER COSTS						
I.	Subsidy costs - scholarships from sources other than universities		5.54		12.30		15.05
II.	Expenses on items for which accounts are separately maintained				0.72		1.36
	TOTAL COSTS		99.99		99.99		100.00
	(In lakhs Rupees)		1020.34		1415.69		1381.01
	Number of University Covered		9		9		9
	Average budget per university		113.37		157.30		153.45

* The items do not total upto 100% because of fractional differences

1974-75--77

AFFILIATING UNIVERSITIES

Items of Costs/Years	1974-75		1975-76		1976-77	
	%age to operating costs	%age to grand total	%age to operating costs	%age to grand total	%age to operating costs	%age to grand total
A. OPERATING COSTS						
I. Costs of Teaching Inputs						
1) Wage costs-teaching staff	23.61	19.79	22.10	18.00	26.32	20.67
2) Costs of teaching materials	4.44	3.72	3.63	2.96	4.36	3.43
3) Library costs	3.69	3.09	4.58	3.73	3.04	2.39
TOTAL TEACHING INPUTS COSTS	31.74	26.60	30.31	24.69	33.72	26.49
II. Costs of Students Welfare						
1) Subsidy costs - scholarships, stipends from university sources	1.29	1.08	1.68	1.37	1.99	1.57
2) Games and sports	0.89	0.74	0.73	0.59	0.58	0.46
3) Hostels	1.07	0.90	1.18	0.96	0.89	0.70
TOTAL COSTS OF STUDENT WELFARE	3.25	2.72	3.59	2.92	3.46	2.73
III. Costs of General Administrative and Supporting Services						
1) Wage costs- administrative staff	26.47	22.18	23.01	18.74	25.61	20.13
2) Costs of consumable stores supplies and other supporting services	18.75	15.70	19.28	15.70	18.05	14.18
3) Costs of maintenance and repairs	1.43	1.20	2.55	2.08	2.26	1.78
4) Financial assistance to colleges/institutions	1.90	1.59	8.61	7.02	6.71	5.27
TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	48.55	40.67	53.45	43.54	52.63	41.36
IV. Costs of Examinations	16.42	13.75	12.66	10.31	10.18	8.00
TOTAL OPERATING COSTS	99.96°	83.74	99.98°	81.45	99.99°	78.58

Contd. . Table No. 2. 3
Structure of Costs - University, System, India, 1974-75--77

AFFILIATING UNIVERSITIES

Items of Costs/Years	1974-75		1975-76		1976-77	
	%age to capital costs	%age to grands total	%age to capital costs	%age to grand total	%age to capital costs	%age to grand total
B. COSTS OF CAPITAL FORMATIONS						
I. Library	12.28	1.59	10.33	1.48	11.41	1.74
II. Buildings	59.17	7.69	57.47	8.21	50.75	7.78
III. Equipments and machines	15.06	1.96	13.69	1.96	14.19	2.16
IV. Other Items	13.49	1.76	18.51	2.65	19.39	2.95
TOTAL COSTS OF CAPITAL FORMATIONS	100.00	13.00	100.00	14.29	100.00	15.22**
TOTAL OPERATING AND CAPITAL COSTS		96.74		95.74		93.80
C. OTHER COSTS						
I. Subsidy costs - scholarships from sources other than universities		2.72		3.41		2.92
II. Expenses on items for which accounts are separately maintained		0.38		0.85		3.28
TOTAL COSTS		99.94*		100.00		100.00

**Percentage does not add upto 100 percent break up of capital items by one university is not given whereas total staff costs figures are provided.

*The items do not total upto 100% because of fractional differences

The administrative and supporting services in residential type of universities aim around 46 percent which is almost 7 percent lower than those of the affiliating pe. Proportion of funds that goes for management of examinations in residential pe is around 9 percent which is around one percent lower than what is observed the affiliating types. Similarly, on consumable stores also,affiliating type spends ore than residential type.

The reason for higher costs of general and administrative services and costs of anagement of examinations in affiliating type of universities can be broadly explained terms of some administrative services rendered by these universities to their affilia-d and constituent colleges and for conducting of examinations for the students enrolled affiliated and constituent colleges. Partly, it may also be owing to relatively bigger dministrative structure that has been built in affiliating type of universities as compar-d to that in residential type.

A relatively higher proportion is spent on teaching inputs in residential univer-ities. This may be partly due to the fact that unlike affiliating types of universities, resi-etail type caters for large number of students enrolled for graduate degrees. This eing so the proportion of costs of teaching inputs are relatively higher in residential pe.

However, in residential type of universities costs of teaching material are elatively low. Thus such universities appear to allocate relatively small funds for eaching material and library services. Whereas proportion of funds allocated to these ems in affiliating universities is higher. This means universities which provide for nly postgraduate education allocate more funds on teaching material and for library ervices. In other words teaching aid provided by residential type is relatively poorer han the affiliating types. For other items picture seems to be more or less similar.

Thus the structure of operating costs though broadly of similar pattern, yet ithin the broad activities the pattern of costs in these two types of universities is dif-erent. The higher allocation on administrative and supporting services in the affilia-ing types of universities call for further investigation as to how much is due to servic-s rendered to affiliated colleges and how much is owing to larger administrative tructure that has been built over the years.

tructure of Capital Costs

The pattern of capital costs structure in 1976-77 in residential universities as more or less similar to that of the structural pattern in affiliating types. However n terms of magnitude the percentage amount spent on buildings in residential uni-ersities was less than that in affiliating type. In the former about 34 percent of he total capital investment was on buildings, whereas in the latter it was about 51 per-ent.

The proportion of amount invested in building the libraries in residential and affiliating type was more or less the same. In 1976-77 this item in the residential accounted for 11.57 percent whereas in affiliating it accounted for 11.41 percent. The amount invested in equipments/machines and 'other items' was more. In the residential type proportion spent on these two items was 23 and 30 percent and in latter it was 14 and 19 percent respectively.

Thus like expenditure on library under the current account, the amount of capital investment on library in the residential type of universities was smaller than the affiliating type. In other words infrastructure for library and library services receive relatively little importance in the residential than in the affiliating universities.

Structure of Costs in Professional Universities

Data regarding a large number of professional universities are not available. However, data are available for about 16 professional universities for 1974-75, 8 each for 1975-76 and 1976-77, and they are analysed here. This forms 53 and 27 percent of total professional universities in these years. Since the proportion of professional universities covered here is relatively small, conclusions drawn from this analysis may be taken with caution. The types of professional universities discussed here include agriculture, technical, sanskrit, english and foreign languages, social sciences and music and culture.

The cost structure of professional universities is presented in the table 2.4. Of the total budget 77 percent is on operating expenses, 22 on capital infrastructure and about 1 percent on the scholarships and other items for which accounts are maintained separately. Because some universities have not reported figures of scholarships from other sources the proportion spent on this item is small.

Of the total operating costs in 1976-77 teaching inputs account slightly more than half of the total operating costs. In this category the wage cost of teaching staff accounted for 39 percent approximately. The proportion of amount spent on teaching material was 11 percent. The student welfare accounted for little above 3 percent. In this category the subsidy cost was around 2.34 percent; the games and sports and hostels facilities accounted for 0.21 and 0.81 percent.

The proportion of amount spent on administrative and supporting services was 43 percent. In this category the wage costs of the staff claimed 18 percent and the other consumable stores 23 percent. The management of examinations accounted for only 1.65 percent.

When we compare the cost structure in professional universities with that in general universities we observe that in the former major resources are put for

Structure of Costs - University System, India
1974-75--77

PROFESSIONAL UNIVERSITIES

Items of Costs/Years	1974-75		1975-76		1976-77	
	%age to operating costs	%age to grand total	%age to operating costs	%age to grand total	%age to operating costs	%age to grand total
A. OPERATING COSTS						
I. Costs of Teaching Inputs						
1) Wage Costs-teaching staff	48.09	36.67	27.81	18.91	38.79	29.88
2) Costs of teaching materials	8.61	6.56	13.90	8.46	10.49	8.08
3) Library costs	2.46	1.88	2.58	1.75	2.38	1.83
TOTAL TEACHING INPUTS COSTS	59.16	45.11	44.29	29.12	51.66	39.79
II. Costs of Students Welfare						
1) Subsidy costs - scholarships, stipends from university sources	3.30	2.51	1.64	1.11	2.34	1.80
2) Games and sports	0.12	0.09	0.36	0.24	0.21	0.17
3) Hostels	0.65	0.49	0.58	0.39	0.81	0.62
TOTAL COSTS OF STUDENTS WELFARE	4.07	3.09	2.58	1.74	3.36	2.53
III. Costs of General Administrative and Supporting Services						
1) Wage costs - administrative staff	15.80	12.04	18.55	12.61	18.27	14.07
2) Costs of consumable stores supplies and other supporting services	18.54	14.13	29.58	20.12	22.78	17.55
3) Costs of maintenance and repairs	1.64	1.26	3.56	2.42	2.27	1.75
4) Financial assistance to colleges/institutions						
TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	35.98	27.43	51.69	35.15	43.22	33.37
IV. Costs of Examinations	0.79	00.61	1.44	0.97	1.65	1.27
TOTAL OPERATING COSTS	100.00	76.25	100.00	68.03	100.00	76.96

Contd.. Table No. 2.4
Structure of Costs - University System, India
1974-75--77

PROFESSIONAL UNIVERSITIES

Items of Costs / Years		1974-75		1975-76		1976-77	
		%age to capital costs	%age to grand total	%age to capital costs	%age to grand total	%age to capital costs	%age to grand total
B.	COSTS OF CAPITAL FORMATION						
I.	Library	4.82	0.97	7.13	1.68	7.94	1.77
II.	Buildings	59.23	12.02	41.13	9.72	29.53	6.58
III.	Equipments and machines	28.31	5.75	23.55	5.57	48.13	10.72
IV.	Other items	7.63	1.55	28.19	6.66	14.38	3.21
	TOTAL COSTS OF CAPITAL FORMATIONS	99.99[*]	20.30	99.99[*]	23.63	99.98[*]	22.28
	TOTAL OPERATING AND CAPITAL COSTS		96.55		91.66		98.74
C.	OTHER COSTS						
I.	Subsidy costs - scholarships from sources other than universities		3.22		3.38		1.19
II.	Expenses on items for which accounts are separately maintained		0.22		4.96		0.07
	TOTAL COSTS		99.99		100.00		100.00
	AMOUNT IN RUPEES (Lakhs)		1374.07		919.49		1048.88

[*] The items do not total upto 100% because of fractional differences

aching inputs than in the latter type. The wage cost of teaching staff in professional
iversities was almost 10-11 percent higher than in the general universities. How-
er, the proportion of amount spent on wages of teaching staff in professional uni-
ersities is similar to the proportion obtaining in residential universities. The pro-
rtion of amount spent as wage cost of administrative staff was less by 7 to 8 per-
nt in professional than in general universities. The proportion as wage costs of
ministrative staff in professional universities broadly compares with the proportion
ent in residential type. Thus the professional universities spend more resources
r teaching inputs and less on administrative and supporting services than the general
iversities.

In structural pattern a major difference is observed for management of
aminations. In the professional universities the proportion of amount spent on
aminations was much smaller than the amount spent in general and within general,
filiating and residential universities. This may be because of the fact that in the
ost of the professional universities internal assessment/evaluation and semester
stem has been introduced. The nature of this system of examinations is such that
sessment is periodically carried out by the teachers of the university and very
tle amount is spent either for payment to the examiners or on organizing the exami-
tion activities.

he Structure of Costs in Professional Universities: A time period analysis

The structure of costs has experienced little changes during the period under
dy as far as the importance of the major activities are concerned. However, changes
e noticed in the magnitude of proportion of amounts spent on various activities. The
oportion spent on teaching inputs in 1976-77 was smaller than the proportion of
nount spent on it in 1974-75. In 1974-75 amount spent was 59 percent whereas that
1976-77 was only about 52 percent. In this category major change is observed in
e case of wage costs.

The proportion of amount spent on teaching materials also increased in 1976-77
compared to that in 1974-75. However it was less than the proportion spent in
75-76. The amount spent on library services in 1976-77 was slightly less than the
oportion spent in 1974-75. The amount spent on student welfare in 1976-77 was also
ss than in 1974-75.

The administrative and supporting services gained in terms of proportion of
nount allocated to it. In this category wage cost of administrative staff and costs on
nsumable stores increased. In 1974-75 the wage cost of administrative staff was
ound 16 percent, in 1976-77 it was 18.27 percent. That on consumable stores in-
eased to 23 percent in 1975-76 from 19 percent in 1974-75. See table 2.4.

Thus of the total operating costs over the period of 3 years, cost on administrative and supporting services has increased and the trend is towards the pattern of costs in the general type of universities. In other words, it may be stated that administrative and supporting services have gained importance in the working of professional universities. Although the share is relatively smaller than that observed in general type of universities, yet the trend shows that in course of time it will reach the level of general universities.

Structure of Capital Cost:Time Period Analysis - Professional Universities

In terms of importance of items of capital investment a major change has taken place over the period under study. The magnitude of total capital funds allocated to various items has changed. The proportion of amount spent on buildings was almost 30 percent less in 1976-77 than in 1974-75 whereas that on equipments/machines increased by 20 percent. The investment on libraries has also gained over the period of 3 years. In 1974-75 of the total capital funds the amount invested on library was 4.82 percent. In 1976-77 it increased to 7.94 percent. See table No.2.4.

Thus structure of operating costs in professional universities also experienced a change in teaching inputs,students' welfare and administrative and supporting services as far as the magnitude of amount allocated is concerned. However, in terms of importance of these activities the teaching inputs claimed a higher proportion than administrative and supporting services. This feature is similar to what is observed in the case of residential universities but it is different from affiliating universities. Structural pattern of capital costs in professional universities was different from other types.

Structure of Costs in Central Universities

The structure of costs in central universities is analysed here. In 1976-77 operating costs of teaching inputs in central universities accounted for 39 percent approximately. Student welfare for 4.56 percent. Administrative and supporting services claimed more than half of the operating budget. The cost of management of examinations was only 2 percent (For details See Table No. 2.5).

The structure of costs of central universities is similar to the pattern of costs in general universities. However, in terms of magnitude of the proportion,the amount spent on administrative staff and consumable stores/supplies was higher in the centrally financed universities than in the general and professional universities. and within general residential and affiliating types. The wage costs of administrative staff were also higher than the wage costs of teaching staff in this type of universities. The management of examinations costed least as compared to other universities.

CENTRAL UNIVERSITIES

Items of Costs/Years		1976-77	
		%age to operating costs	%age to grand total
A.	OPERATING COSTS		
I.	Costs of Teaching Inputs		
	1) Wage costs teaching staff	29.88	22.12
	2) Costs of teaching materials	6.88	5.09
	3) Library costs	2.57	1.90
	TOTAL TEACHING INPUTS COSTS	39.33	29.11
II			
II.	Costs of Students Welfare		
	1) Subsidy costs - scholarships, stipends from university sources	3.19	2.35
	2) Games and sports	0.22	0.16
	3) Hostels	1.15	0.87
	TOTAL COSTS OF STUDENTS WELFARE	4.56	3.38
III.	Costs of General Administrative and Supporting Services		
	1) Wage costs - administrative staff	32.94	24.38
	2) Costs of consumable stores supplies and other supporting services	17.13	12.69
	3) Costs of maintenance and repairs	3.99	2.96
	TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	54.06	40.03
IV.	Costs of Examinations	2.05	1.51
	TOTAL OPERATING COSTS	100.00	74.03

Contd. . Table No. 2. 5
Structure of Costs - University System, India,
1976-77

CENTRAL UNIVERSITIES

Items of Costs/Years	1976-77	
	%age to capital costs	%age to grand total
B. COSTS OF CAPITAL FORMATION		
I. Library	11.71	1.46
II. Buildings	44.46	5.53
III. Equipments and machines	18.55	2.31
IV. Other items	10.88	1.35
TOTAL COSTS OF CAPITAL FORMATION	85.60*	12.44*
TOTAL OPERATING AND CAPITAL COSTS	.	86.47
C. OTHER COSTS		
I. Subsidy costs - scholarships from sources other than universities		5.62
II. Expenses on items for which accounts are separately maintained		7.90
TOTAL COSTS		99.99
(In lakhs Rupees (0.10 Million))		3396.53
Number of University Covered		5
Average budget per university (In lakhs Rupees)		679.31

* Item-wise break up of non-recurring expenditure in the case of Aligarh Muslim University is not available. Hence percentage of individual items adds to less than total non-recurring expenditure.

onclusions

The following broad conclusions may be drawn from the analysis of the ructure of costs:

> Of the total budget of the universities in India about 78-80 percent is on operating expenses, and 15-18 percent on capital formation. That 5-7 percent are accounted by scholarships and 'other items' for which accounts are maintained separately and are not on the charge of the university. Thus major part of the budget is committed one, only 15 percent of the budget goes for infrastructural development. Thus prima facie it might appear that there is little scope for maneouring the costs, but a detailed analysis of operating costs suggest that there is a great deal of scope for doing so as to effect economies in the working of the universities.
>
> Of the operating costs a larger proportion is allocated to administrative and supporting services. This is almost half of the total operating budgets. The teaching inputs claim around 1/3rd of the total operating budget. The share of student welfare was around 3.5 percent. The management of examinations accounts for around 10-12 percent. This suggests that although one of the main activities of the universities is to give instruction to students for various degree courses, yet administrative and supporting services play a major role in their working. It appears that because of the past policies our university system has built a bigger administrative structure over a period of time. Whether this is a desirable phenomenon or not needs to be probed further. Even if allowances are made for some of the consumable stores which indirectly go as inputs for teaching and some services that are rendered to affiliated colleges, the amount spent on this activity appears to be high. So much so that wage cost of administrative staff is more or less similar to the wage costs of teaching staff. The higher cost of supporting services which by definition are created to support the main activities of the institution necessarily calls for a detailed examination of the administrative structure as obtaining in the university system of India. Possibly through administrative reforms in universities some economies can be effected and resources thus saved can be used for providing better education.
>
> Over the period under reference the cost of teaching inputs, particularly wage cost of teaching staff has increased. This is, as stated earlier, due mainly to the implementation of the new UGC scales in many of the universities during the years 1974-75--77. At the same time costs of general administrative and supporting services have also increased. The proportion of amount spent on student welfare particularly on activities such as games and sports and hostel facilities has declined. However, in this activity the amount spent on scholarships and stipends has increased slightly. The

amount spent on management of examinations also declined. The proportion of amount allocated to this activity was less than the proportion spent in 1974-75 by almost 7 percent. Thus increase in amount spent on teaching inputs and general administrative and supporting services may have been possible by allocating relatively small amount of increased budgets on student welfare or through reduction in cost of management of examinations. Although examinations are largely a full-cost priced activity in the working of a university (because students pay fee towards the conduct of examinations) yet the reduction in proportion of amount spent on examinations may be said to be a happy feature.

That amount spent on teaching inputs in residential types of universities is relatively higher than the affiliating type of universities. Thus the residential type of universities make better provisions for teaching inputs. However, in these universities the amount spent on teaching aids namely,library& teaching material was relatively less than the amount spent on these items in affiliating type of universities. The management of examinations in the residential type of universities costs relatively less than in the affiliating type.

Over the period under study the structure of costs in residential type have moved in favour of teaching inputs which is in a way similar to what was stated in the case of affiliating type. The administrative and supporting services costs have also increased in the residential type universities whereas the costs of management of examinations have declined over the period under reference.

Thus in residential type of universities teaching inputs have a better share as compared to the claims of other types. Yet in these universities also,there is a need for increasing allocation on teaching aids particularly on library services.

The analysis of costs structure in professional universities revealed that teaching inputs claim relatively larger share in these universities than in the general universities. In professional universities proportion of amount spent on administrative and supporting services is relatively less. Therefore, it can be said that so far in this type of universities not a very large administrative structure has been built. However, the trend shows that over the period under study the professional universities are also catching up with the level of proportion in the general universities.

The proportion of amount spent on management of examinations is only 1.65 percent of the total operating budget. This figure is almost less by 10 percent as compared to affiliating and residential type of universities. This may be as stated above, due to the fact that semester system and internal evaluation have been introduced in these universities. This system of examination does not require heavy expenses on organizing examination activity.

The pattern of structure of costs in central universities broadly compared with general universities for the magnitude of amount spent on various items. Proportion spent on wage costs to administrative staff was higher whereas it was less on examinations.

n up:

Over the period of time a bigger administrative structure has been built in our university system. The administrative reforms might save a great deal of resources in general universities.

It can be said that the introduction of periodical and internal assessment might save quite a fair amount of resources of universities.

In any case there is a clear case for a thorough probe into the administrative structure in the universities. The enquiry may be directed to find out whether the cost of administration can be reduced by certain reforms and, if so what measure needs to be taken to improve upon the efficiency in use of resources.

CHAPTER III

UNIT INSTITUTIONAL COSTS

The structure of costs analysis reveals the magnitude of resources allocated to various activities in the university system. But this analysis does not reveal many aspects of costs, particularly the unit costs of education, meaning how much it costs to a university to educate each student. Unit cost analysis, if available, can provide greater insight into the working of the system. An expost analysis of such costs can, given changes in education technology, prices and the effectiveness of the system, form a basis for working out resource requirements to achieve the desired objectives. In brief, such analysis is useful in planning education.

An important question arises here: What should be the unit of measurement? Should it be students enrolled or students graduated? Should it be the number of departmental teaching units or any other unit? To analyse the unit cost of education in Indian universities two units of measurement are necessary: unit costs per student enrolled in the university teaching departments for graduate, postgraduate and research degrees and unit costs of operating a teaching department in universities of India.

An analysis of unit costs is attempted for operating and capital costs. Under operating costs, costs of teaching inputs, student welfare and administrative and supporting services are discussed. Unit costs of capital formation are discussed itemwise, namely buildings, library, machinery and equipment and other items. In analysing unit costs, expenses incurred in providing grants to colleges and other institutions are excluded because such expenditures in no way enter into the process of instruction. Similarly expenditures on examinations are analysed on the basis of examinee rather than students enrolled. With a view to getting a better insight into the working of the university system Unit costs are analysed separately for: a) general, residential and affiliating universities; b) professional universities; and c) centrally financed universities.

Annual average costs per student and per teaching department are analysed for the three years 1974-75--77.

Annual average Costs Per Student, general universities

In 1976-77 unit operating costs per student was Rs. 3570. Of this amount unit costs of teaching inputs were Rs. 1476, those of student welfare Rs.150, and costs of administrative and supporting services Rs. 1944. See table 3. 1.

aching Inputs

Of the total costs of teaching inputs Rs 1166 per student was spent as wage teaching staff. Teaching material accounted for Rs 181 and library for Rs 129 per dent per annum.

udent welfare

The unit costs of student welfare was Rs. 150 per annum. Of this Rs. 81 was ovided in the form of scholarships and stipends from university sources. Games, orts and hostels accounted for Rs. 27 and Rs. 42 per student per annum respectively.

neral administration and supporting services

Unit costs on general administration and supporting services was Rs. 1944. Of is wages of administrative staff accounted for Rs. 1083 per student. Unit costs of nsumer stores/supplies was Rs 762 and those of maintenance and repairs of buildings d other infrastructures was Rs. 99. Thus unit costs per student on general adminis-ation and supporting services was higher by about Rs. 318 per student compared with ose of teaching inputs and student welfare. Given the structure of the university stem, the major input in teaching is only teachers wages. Teaching aids cost less an a fifth of inputs under this head. Administrative and supporting service costs, hich indirectly help teaching activity, was higher than direct input costs of teaching.

ime period analysis

Over the period under reference unit operating costs per student increased. In 974-75, they were around Rs 2223 but rose in 1976-77 to Rs 3570. The increase in nit wage costs of teaching staff was relatively higher, probably because of the revision f pay scales of university teachers. The unit costs of games, sports and hostel cilities increased marginally. The unit wage costs of administrative staff increased y Rs 395 per student in the period under study. The cost of consumable store increas-d by almost Rs 282 per student.

The increase in unit costs per student on both teaching inputs and administra-ive and supporting services might have been partly due to changes in the wage struc-ure of teaching and non-teaching staff and increased prices of consumables stores and upplies. It might have been partly due to increased allocation on these activities with-ut a proportionate increase in the number of students, or because of a decline in the umber of students enrolled. It may be pointed out that the unit cost per student need ot necessarily increase every year if the created capacity is not fully utilised. But the elation between unit cost per student and size of enrolment is examined in the follow-ng chapter which discusses economies of scale in the university system. Suffice to ay that unit costs per student have increased in the years under reference.

Per unit costs of capital formation

It would have been better had we obtained data on various measurements of other unit capital costs such as built in area or by activities. Since such data are not available, we use students as the unit of measure of capital formation. In the ultimate analysis such capital infrastructures are created to provide facilities to students and are measured in terms of financial value of assets. Student as a unit of measurement may therefore be fairly reasonable.

Unit costs of capital formation in general universities in 1976-77 were Rs 832 per student. Of this amount Rs 409 was spent on constructing buildings and Rs 95 on library facilities. Equipment and machinery and 'other items' accounted for Rs 127 and Rs 172 respectively. Thus the major part of investment was on creating building infrastructures.

Costs of capital formation - time period analysis

During the period under study, expenditure on capital formation in general universities increased by almost Rs 364 per student. In 1974-75, the amount spent was Rs and in 1976-77 it increased to Rs 833. The amount spent on all capital infrastructures increased with the largest increase in expenditure on buildings. The increase was Rs 164 per student from 1974-75. The unit increase in capital costs may be partly due to rising costs of construction materials and other capital goods. But it may be partly due to increased allocation on capital formation.

Unit cost per student, residential type of university

Before we discuss unit costs per student in residential universities, to view the unit costs in proper perspective a brief mention about the nature of such universities may be relevant. They provide education for undergraduate and postgraduate and research degrees. But they are different from affiliating universities in the sense that this type caters mainly to postgraduate and research degrees while undergraduate education is generally provided by affiliated colleges. In drawing conclusions regarding the unit costs in residential universities this aspect may be kept in view.

Unit operating costs

In 1976-77, total operating unit costs per student were Rs 2969 per annum. Of them, costs of teaching inputs were Rs 1407 per student Student welfare and administrative and supporting services accounted for Rs 137 and Rs 1425 per student respectively.

Unit Costs - Per Students, by items, University System, India
1974-75--77

GENERAL UNIVERSITIES

(AMOUNT IN RUPEES)

			Items of Costs/Years	1974-75	1975-76	1976-77
A.	OPERATING COSTS					
	I.		Costs of Teaching Inputs			
		1)	Wage costs teaching staff	679	823	1166
		2)	Costs of teaching materials	129	115	181
		3)	Library costs	112	149	129
			TOTAL TEACHING INPUTS COSTS	920	1087	1476
	II.		Costs of Students Welfare			
		1)	Subsidy costs - scholarships, stipends from university sources	25	64	81
		2)	Games and sports	30	27	27
		3)	Hostels	39	40	42
			TOTAL COSTS OF STUDENTS WELFARE	94	131	150
	III.		Costs of General Administrative and Supporting Services			
		1)	Wage costs - administrative staff	688	800	1083
		2)	Costs of consumable stores, supplies and other supporting services	480	654	762
		3)	Costs of maintenance and repairs	41	86	99
			TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	1209	1540	1944
			TOTAL OPERATING COSTS	2223	2758	3570

Contd. . Table No. 3. 1
Unit Costs - Per Student by Items, University System, India
1974-75--77

GENERAL UNIVERSITIES

(AMOUNT IN RUPEES)

	Items of Costs/Years	1974-75	1975-76	1976-77
B.	COSTS OF CAPITAL FORMATIONS			
I.	Library	54	68	95
II.	Buildings	263	372	409
III.	Equipments and machines	76	101	127
IV.	Other items	76	95	172
	TOTAL COSTS OF CAPITAL FORMATIONS	469	736	833*
	TOTAL OPERATING AND CAPITAL COSTS	2692	3444	4403

---

*The itemwise figures do not add upto the total capital costs because one of the universities has not provided the itemwise break up of its capital costs

Table No. 3.2
Unit Costs - Per Students, by Items, University System, India
1974-75--77

RESIDENTIAL UNIVERSITIES

(AMOUNT IN RUPEES)

Items of Costs/Years	1974-75	1975-76	1976-77
A. OPERATING COSTS			
I. Costs of Teaching Inputs			
1) Wage costs teaching staff	767	1205	1201
2) Costs of teaching materials	76	79	107
3) Library costs	142	81	99
TOTAL TEACHING INPUTS COSTS	985	1365	1407
II. Costs of Students Welfare			
1) Subsidy costs - scholarships, stipends from university sources	31	56	39
2) Games and sports	34	25	36
3) Hostels	50	30	62
TOTAL COSTS OF STUDENTS WELFARE	115	111	137
III. Costs of General Administrative and Supporting Services			
1) Wage Costs - administrative staff	596	686	789
2) Costs of consumable stores, supplies and other supporting services	419	344	543
3) Costs of maintenance and repairs	43	76	93
TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	1058	1106	1425
TOTAL OPERATING COSTS	2158	2582	2969

Contd.. Table No. 3.2
Unit Costs - Per Students, by Items, University System, India
1974-75--77

RESIDENTIAL UNIVERSITIES

(AMOUNT IN RUPEES)

	Items of Costs/Years	1974-75	1975-76	1976-77
B.	COSTS OF CAPITAL FORMATIONS			
I.	Library	24	78	80
II.	Buildings	129	251	234
III.	Equipments and machines	76	149	164
IV.	Other Items	76	716	210
	TOTAL COSTS OF CAPITAL FORMATIONS	305	1194	688
	TOTAL OPERATING AND CAPITAL COSTS	2463	3776	3657

struction. Spending on library facilities was Rs 80, equipment and machines and 'other items' accounted for Rs 164 and Rs 210 respectively.

Over the period under study the magnitude of amount spent per student on capital formation in residential universities increased by Rs 383. The increase in unit costs of building construction, machines and equipments was significant. Unit spending on this item increased by almost Rs 100, while that on equipment and machines by around Rs 88 per student and that on 'other items' Rs 134. As stated earlier the magnitude of the increase in creating infrastructure may partly be due to higher prices of capital goods, and in some part increased allocation of funds for creating capital infrastructure. It may however, be noted that per student amount spent on capital formation was higher in 1975-76 than in 1976-77. This was mainly due to increased allocation on other items by some universities. However, this type of fluctuations can be expected in the cost of capital formation.

Unit costs per student, affiliating universities

To recapitulate, affiliating universities mainly provide facilities for obtaining postgraduate and research degrees on their campuses, conduct examinations for such degrees for students enrolled in departmental teaching unit and affiliated colleges and provide some services to colleges affiliated to them. The unit cost per student discussed below may be viewed in this context.

In 1976-77, unit operating costs in this type of university was Rs 3723 per student. Teaching inputs accounted for Rs 1510 and the unit costs of student welfare and general administration and supporting services were Rs 155 and Rs 2058 per student respectively. Thus unit costs under this head were higher by almost Rs 548 per student than on those of teaching inputs.

Teaching inputs

Of the unit costs of teaching inputs, the wage costs of teaching staff were around Rs 1179. Teaching material and library services cost Rs 195 and Rs 136 respectively.

Of the cost of Rs 155 per student on welfare Rs 89 per student was for scholarships and stipends. Games and sports and hostels accounted for Rs 26 and Rs 40 respectively.

General administrative and supporting services

Of the unit cost of Rs 2058 on general administration and supporting services wages of administrative staff amounted to 1148 per student. Consumable stores and other supplies accounted for Rs 809, and cost of maintenance and repairs was Rs 101

The unit wage cost of administrative staff in this type of university was almost equal to the wage costs of teaching staff. In affiliating universities the major expenditure appears to be on administration and supporting services rather than on teaching inputs and welfare together. The per unit cost of both these items was less compared with costs of general and administrative staff and supporting services by almost Rs 393 per student. This is rather large sum, and though it is true that part of the costs was on account of services rendered to colleges a large share was due to the bigger administrative infrastructure that appears to have been created in affiliating universities.

Unit operating costs - time period analysis

In the period under study unit operating costs per student in affiliating universities increased about Rs 1479 per student. The per unit costs of teaching input increased by Rs 608 and the student welfare by Rs 67, the subsidy to students increased by Rs 65 whereas increase in hostel costs was marginal. But costs of games and sports decreased marginally.

Capital formation in affiliating type of universities

The amount spent on capital formation in affiliating universities was Rs 868 per student, and of this most went to constructing buildings. This item accounted for Rs 443 per student, library for Rs 99 and equipment and machinery and 'other items' for Rs 123 and Rs 168 respectively.

Unit cost oı capital formation over time increased by about Rs 352 per student. In 1974-75, the amount spent on capital formation was Rs 516 per student, and this increased to Rs 868 in 1976-77. Building costs increased by Rs 141 per student. The increase in capital costs, as stated earlier, may have been partly due to increased allocation for capital formation and partly to increase in prices of material and capital goods.

Unit cost of education in affiliating and residential universities, a comparison

Comparison of unit operating costs per student in affiliating and residential types of universities reveals that in the first type such costs are higher by Rs 754 compared with the second type. In 1976-77, unit operating costs in these types were Rs 3723 and Rs 2969 respectively. Unit costs of teaching inputs were more by Rs 93 per student. In affiliating types, where the amount was Rs 1510 compared with Rs 1407 in the residential type. The unit cost of student welfare in the affiliating type was Rs 155 and that in the residential type Rs 137.

Table No. 3.3
Unit Costs - Per Students, by Items, University System, India
1974-75--77

AFFILIATING UNIVERSITIES

(AMOUNT IN RUPEES)

		Items of Costs/ Years	1974-75	1975-76	1976-77
A.		OPERATING COSTS			
I.		Costs of Teaching Inputs			
	1)	Wage costs teaching staff	654	801	1179
	2)	Costs of Teaching material	145	131	195
	3)	Library costs	103	166	136
		TOTAL TEACHING INPUTS COSTS	902	1098	1510
II.		Costs of Students Welfare			
	1)	Subsidy costs - scholarships, stipends from university sources	24	61	89
	2)	Games and sports	29	26	26
	3)	Hostels	35	43	40
		TOTAL COSTS OF STUDENTS WELFARE	88	130	155
III.		Costs of General Administrative and Supporting Services			
	1)	Wage costs - administrative staff	715	834	1148
	2)	Costs of consumable stores, supplies and other supporting services	498	699	809
	3)	Costs of maintenance and repairs	41	93	101
		TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	1254	1626	2058

Contd. . Table No. 3. 3
Unit Costs - Per Students, by Items, University System, India
1974-75--77

AFFILIATING UNIVERSITIES

(AMOUNT IN RUPEES)

	Items of Costs/Years	1974-75	1975-76	1976-77
B.	COSTS OF CAPITAL FORMATIONS			
I.	Library	62	66	99
II.	Buildings	302	365	443
III.	Equipments and machines	77	87	123
IV.	Other items	75	117	168
	TOTAL COSTS OF CAPITAL FORMATIONS	516	636	868*
	TOTAL OPERATING AND CAPITAL COSTS	2760	3490	4591

---

* The itemwise figures do not add upto the total capital costs because one of the universities has not provided the itemwise break up of its capital costs

Unit costs of general administrative and supporting services in affiliating universities was almost Rs 633 higher to those of in the residential type. The major differences in costs under this head was due to the wages costs of administrative staff, which were almost Rs 359 higher in the affiliating type. Unit wage costs on administrative staff in the first type were Rs 1148, while only Rs 789 in the second.

Our earlier findings that affiliating universities spent more on administrative and supporting services is reinforced. Although part of the higher unit cost under this head in the affiliating type may be due to some services provided to affiliated colleges, such a large difference can hardly be accounted for by the difference in nature of these two types of universities. The higher unit costs therefore seems to be due to the larger administrative infrastructure built in these universities. This difference calls for an indepth investigation of the administrative structure of affiliating universities.

The slightly higher unit costs on teaching inputs in affiliating universities may be because the provision of only postgraduate research degree education on the campus costs more. This may result partly from the small number of students and partly from better teaching aids and library facilities. In sum, it may be stated that unit operating costs per student in residential universities is less than that in the affiliating type. Restructuring the administration and admitting more students to affiliating universities might help reduce unit costs.

Unit costs of capital formation

The amount spent on capital formation in affiliating is Rs 20 less per student than in residential universities. In term of capital items, but for some difference in the amount spent per student not much difference in pattern is observed. In residential universities the amount spent on creating library facilities is smaller than the outlay in affiliating universities. Thus it appears that affiliating universities emphasise the creation of better library facilities than the residential type.

Unit costs in professional universities

In 1976-77 unit operating costs for professional education was Rs 10,068 per student per annum. This figure was three times of unit costs of education in other universities. Of the total operating costs, teaching inputs accounted for Rs 5288 per student per annum. Of this Rs 3971 per student was spent as wage costs of teaching staff. Teaching material accounted for Rs 1074. Unit cost of library services was

Table No. 3.4

Unit Costs - Per Student, by Items, University System, India

1974-75--77

PROFESSIONAL UNIVERSITIES

(AMOUNT IN RUPEES)

Items of Costs/Years	1974-75	1975-76	1976-77
A. OPERATING COSTS			
I. Costs of Teaching Inputs			
1) Wage costs teaching staff	2703	2384	3971
2) Costs of teaching materials	484	1193	1074
3) Library costs	138	221	243
TOTAL TEACHING INPUTS COSTS	3325	3798	5288
II. Costs of Student Welfare			
1) Subsidy costs - scholarships, stipends from university sources	186	141	239
2) Games and sports	7	31	22
3) Hostels	36	50	84
TOTAL COSTS OF STUDENTS WELFARE	229	222	345
III. Costs of General Administrative and Supporting Services			
1) Wage costs - administrative staff	888	1590	1871
2) Costs of consumable stores, supplies and other supporting services	1042	2537	2331
3) Costs of maintenance and repairs	92	306	233
TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	2022	4133	4435
TOTAL OPERATING COSTS	5576	8153	10068

Contd.. Table No.3.4
Unit Costs - Per Students, by Items, University System, India
1974-75--77

PROFESSIONAL UNIVERSITIES

Items of Costs/Years	1974-75	1975-76	1976-77
B. COSTS OF CAPITAL FORMATIONS			
I. Library	72	212	235
II. Buildings	886	1225	875
III. Equipments and machines	424	701	1426
IV. Other items	116	840	426
TOTAL COSTS OF CAPITAL FORMATIONS	1496	2978	2962
TOTAL OPERATING AND CAPITAL COSTS	7072	11131	13020

about Rs 780 higher compared with cost in other universities. Salaries of teaching staff in the central universities accounted for Rs 1715, which is higher by almost Rs 549 per student compared with general universities and by Rs 514 per student compared with residential universities. Teaching material costs in central universities were Rs 395, almost Rs 214 higher than per unit costs of teaching materials in general universities. Teaching materials accounted for only Rs 181 per student in general universities. There was a marginal difference in the cost of library services in central universities compared with other universities, the figures being Rs 147 and Rs 129 respectively. This difference is very significant when this figures are compared with those for residential universities, where library services account for Rs 99 per student.

Student welfare

The cost of student welfare was Rs 260 per student in the central universities compared with Rs 150 per student in others. Cost of subsidy was higher by almost Rs Rs 100 per student in centrally financed universities. This being Rs 182 against Rs 81 in general universities. But spending on games and sports was relatively small in central universities, while the unit cost of hostels in them was Rs 66 per student which was Rs 20 higher than that of unit costs of hostels in general universities.

Administrative and supporting services

The unit cost of general administrative and supporting services in central universities was Rs 3105 per student, which was higher by almost 1.1/2 to 2 times that in other universities. Salaries of administrative staff amounted to Rs 1892 per student, which was almost Rs 810 higher than costs in other universities. There was a slight difference between per unit cost of consumable stores and supplies between central and general universities. In first group they accounted for Rs 984 per student and Rs 762 in the second, a difference of about Rs 222 per student. The unit cost of maintenance was also larger in central universities-Rs 229 per student-compared with Rs 99 in general universities (for details see Table No. 3. 5)

Thus it may be inferred that the unit operating costs in centrally financed universities are more than those in general universities, and within general universities it was more than the affiliating and residential types.

This was due mainly to higher unit costs on wages of administrative staff. But unit costs on teaching inputs and student welfare also accounted for this difference. Unit costs of general administrative and supporting services was so high that it gives the impression that, as in general universities in centrally financed universities too administration plays a greater role in working than teaching activities.

Another reason for the higher unit costs in central universities may be that

243 per student. The amount spent on the student welfare was Rs 345 per student. this amount Rs 239 per student were spent as scholarships and stipends to students d Rs 22 and Rs 84 per student were spent for games and sports and hostels facilities.

General administration and supporting services accounted Rs 4435 per student. this amount Rs 1871 were spent as wage costs of administrative staff. Consumable ores and supplies costed Rs 2331 per student. The unit cost of maintenance and rks was Rs 233 per student.

The unit costs per student in professional universities was almost Rs 6500 her than in other universities. Per unit amount spent on teaching material was ater in professional universities than in other universities. The difference was nost Rs 800 per student.

sts of Capital Formation

In the 1976-77 Rs 2962 per student was spent on capital formation in profesnal universities. Of this , machines and equipments accounted for larger propor- Rs 1426 per student whereas buildings for Rs 875. The unit cost of building the rary was Rs 235 per student per annum. In creating capital infrastructure it is ipments and machines that have claimed major proportion of funds than the buildings is pattern was different from usual pattern in other universities.

t costs in central universities

Sources of finance influence somewhat the working of a university. If ources are hard to come by, every attempt is made to effect economies in operating institution. But if they are easily obtained less attention is paid to their economical . Most universities in India are financed by state governments, from which it is icult to obtain resources. On the other hand five universities, Banaras Hindu, hi, Jawaharlal Nehru, Aligarh, Muslim and Viswa-Bharati find it relatively easy et resources, which come from the Central Government through UGC. Whether rces of finance have any impact on the unit cost of education in these universities ds a study. Accordingly, the unit costs in central universities are examined here.

operating costs

In 1976-77, the operating costs in central universities was Rs 5622 per lent per annum. This was higher by almost Rs 2000 than similar costs in other ersities. But it was less than unit cost in professional universities.

ching inputs

The unit cost of teaching inputs was Rs 2257 per student. This amount is about Rs 780 higher compared with cost in other universities. Salaries of teaching staff in the central universities accounted for Rs 1715, which is higher by almost Rs 549 per student compared with general universities and by Rs 514 per student compared with residential universities. Teaching material costs in central universities were Rs 395, almost Rs 214 higher than per unit costs of teaching materials in general universities. Teaching materials accounted for only Rs 181 per student in general universities. There was a marginal difference in the cost of library services in central universities compared with other universities, the figures being Rs 147 and Rs 129 respectively. This difference is very significant when this figures are compared with those for residential universities, where library services account for Rs 99 per student.

Student welfare

The cost of student welfare was Rs 260 per student in the central universities compared with Rs 150 per student in others. Cost of subsidy was higher by almost Rs Rs 100 per student in centrally financed universities. This being Rs 182 against Rs 81 in general universities. But spending on games and sports was relatively small in central universities, while the unit cost of hostels in them was Rs 66 per student which was Rs 20 higher than that of unit costs of hostels in general universities.

Administrative and supporting services

The unit cost of general administrative and supporting services in central universities was Rs 3105 per student, which was higher by almost 1.1/2 to 2 times that in other universities. Salaries of administrative staff amounted to Rs 1892 per student, which was almost Rs 810 higher than costs in other universities. There was a slight difference between per unit cost of consumable stores and supplies between central and general universities. In first group they accounted for Rs 984 per student and Rs 762 in the second, a difference of about Rs 222 per student. The unit cost of maintenance was also larger in central universities-Rs 229 per student-compared with Rs 99 in general universities (for details see Table No. 3. 5)

Thus it may be inferred that the unit operating costs in centrally financed universities are more than those in general universities, and within general universities it was more than the affiliating and residential types.

This was due mainly to higher unit costs on wages of administrative staff. But unit costs on teaching inputs and student welfare also accounted for this difference. Unit costs of general administrative and supporting services was so high that it gives the impression that, as in general universities in centrally financed universities too administration plays a greater role in working than teaching activities.

Another reason for the higher unit costs in central universities may be that nore resources are allocated by the Central Government (through UGC) to these niversities.

As because the unit operating costs are very high there is need for an indepth study of the working of these universities from the point of their effectiveness. If higher osts mean better quality and a different type of education the difference may be ustifiable. But if this is not the case than there is need for looking into their working. n any event, a study of the causes of higher unit costs on general administrative ervices calls for a study.

apital costs

Costs of capital formation in central universities in 1976-77 amounted to s 965 per student, and this was marginally higher than the relevant costs in other niversities. The per unit cost of capital formation in the general type was Rs 833 er student. Of the Rs 796 spent on capital in the central universities, Rs 113 was or library and Rs 429 on constructing buildings. Purchase of equipment and machinry and expense on 'other items' accounted for Rs 179 and Rs 105 respectively.

nit cost of examinations

Figures of examinee are available for only 27 general universities . Unit ost per examinee in these universities are accordingly presented in table No 3.6. In 976-77, Rs 126 were spent per examinee for conducting examinations in universities f India. This amount was slightly higher than the amount spent in 1974-75 and less han the amount spent in 1975-76. Since figures of examinee in other types of universities are not readily available, comparison of unit costs per examinee in other niversities is not possible.

cholarship from other than university sources

Universities also receive some money from various resources for giving cholarships to students enrolled with them. Scholarship from other sources in eneral universities in 1976-77 was around Rs 242 per student. This amount as ompared to 1974-75 was more by Rs 28 per student. The amount spent on scholarhips in residential type of universities is Rs 281 per student. Figures for affiliating pe were Rs 167. That for central universities the amount of scholarship given per udent Was Rs 436. This amount as compared to other universities was more. This ay be because central universities get more resources from other sources than her universities. See table 3.7.

Table No. 3. 5
Unit Costs - Per Student - University System, India
1976-77

CENTRAL UNIVERSITIES

(AMOUNT IN RUPEES)

			Items of Costs / Years	1976-77
A.	OPERATING COSTS			
	I.		Costs of Teaching Inputs	
		1)	Wage costs teaching staff	1715
		2)	Costs of teaching materials	395
		3)	Library costs	147
			TOTAL TEACHING INPUTS COSTS	2257
	II.		Costs of Students Welfare	
		1)	Subsidy costs - scholarships, stipends from university sources	182
		2)	Games and sports	12
		3)	Hostels	66
			TOTAL COSTS OF STUDENTS WELFARE	260
	III.		Costs of General Administrative and Supporting Services	
		1)	Wage costs - administrative staff	1892
		2)	Cost of Consumable stores supplies and other supporting services	984
		3)	Costs of maintenance and repairs	229
			TOTAL COST OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	3105

Contd. . . Table No. 3. 5
Unit Costs - Per Student - Central Universities, India
1976-77

(AMOUNT IN RUPEES)

	Items of Costs / Years	1976-77
B.	COSTS OF CAPITAL FORMATION	
I.	Library	113
II.	Buildings	429
III.	Equipment and machines	179
IV.	Other items	105
	TOTAL COSTS OF CAPITAL FORMATIONS	965°
	TOTAL OPERATING AND CAPITAL COSTS	6587

° The itemwise figures do not add upto the total capital costs because one of the universities has not provided the itemwise break up of its capital costs

Table No. 3.6

Unit Costs of Examination, Per Examinee, University System, India,
1974-75--77

Items/Years	1974-75	1975-76	1976-77
Unit Cost Per Examinee (in Rupees)	115.40	137.00	126.23
Total Cost (Rupees in lakhs)	536.61	549.39	607.18
Number of Examinees	4.65	4.01	4.81
Number of Universities Covered	30	27	27

Table No. 3. 7

Scholarship - Per Student (from sources other than the university), University System, India
1974-75--77

Type of University	1974-75	1975-76	1976-77
General Universities	115	207	242
Residential Universities	211	249[•]	281[•]
Affiliating Universities	86	152	167
Central Universities	-	-	436

[•] Since figures reported by Visva -Bharati University and Jodhpur University do not appear to be very reliable they are not considered here.

II

Unit operating costs per teaching department

To ascertain the operation cost of a teaching department, we shall examine here the unit cost of such a department. To operate a teaching department, two types of costs are relevant, namely costs of teaching inputs and costs of administration and supporting services. The costs of student welfare, financial assistance to colleges and costs of examinations are not relevant . The unit operating costs per teaching departmental unit are therefore analysed with respect to only these two relevant items.

Operating costs per teaching department general universities

In 1976-77, Rs 581,000 were spent on an average on running a teaching departmental unit. Of this amount Rs 251,000 was spent per departments on teaching inputs while the unit costs on administration and supporting services per department were Rs 330,000. Details of costs of various items are given in the table No 3.8. Here it is enough to say that the unit costs of a teaching department are higher for administration and supporting services than for teaching inputs. The actual difference was almost Rs 79,000.

Over the period under study unit operating costs per teaching department have increased. In 1976-77, the unit cost was higher by about Rs 200,000 compared with 1974-75, and this increase was mainly due to increased unit costs of teaching inputs and partly to increased costs of general administration and supporting services. Unit costs of these two activities were higher by Rs 86,000 and Rs 113,000 respectively. In these two broad categories, the increase in unit costs per teaching department resulted from the increased salaries of teaching and administrative staff. In the case of teaching staff it was higher by Rs 70, 000 while in that of administrative staff it was Rs 60,000.

Two inferences may be drawn from the above: i) cost of administrative and supporting services was higher than the unit cost of teaching inputs; ii) unit costs per teaching department. increased over the period under study. This increase was mainly due to changes in the wage structure of teaching staff and the increased wage costs of administrative staff.

Units costs per teaching department - comparison between residential and affiliating type of universities

Unit operating costs per teaching department by activities in residential and affiliating type of universities are presented in table No. 3.8 & 3.9. It is pertinent here to compare unit costs per teaching unit in these two types of university. The

Table No. 3.8
Unit Costs - Per Teaching Departments, University System, India
1974-75--77

GENERAL UNIVERSITIES

(AMOUNT IN THOUSAND RUPEES)

Items of Costs/Years	1974-75	1975-76	1976-77
A. OPERATING COSTS			
I. Costs of Teaching Inputs			
1) Wage costs teaching staff	122	152	198
2) Costs of teaching material	23	21	31
3) Library costs	20	28	22
TOTAL TEACHING INPUTS COSTS	165	201	251
II. Costs of General Administrative and Supporting Services			
1) Wage costs - administrative staff	123	148	184
2) Costs of consumable stores supplies and other supporting staff	86	121	129
3) Costs of maintenance and repairs	8	16	17
TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	217	285	330
TOTAL OPERATING COSTS	382	486	581

Table No. 3.9
Unit Costs - Per Teaching Departments, University System, India
1974-75--77

RESIDENTIAL UNIVERSITIES

(AMOUNT IN THOUSAND RUPEES)

Items of Costs/Years	1974-75	1975-76	1976-77
A. OPERATING COSTS			
I. Costs of Teaching Inputs			
1) Wage costs teaching staff	123	182	169
2) Costs of teaching material	12	12	15
3) Library costs	23	12	14
TOTAL TEACHING INPUTS COSTS	158	206	198
II. Costs of General Administrative and Supporting Services			
1) Wage costs - administrative staff	95	104	111
2) Costs of consumable stores supplies and other supporting staff	67	52	76
3) Costs of maintenance and repairs	7	12	14
TOTAL COSTS OF GENERAL ADMINISTRATIVE AND SUPPORTING SERVICES	169	168	201
TOTAL OPERATING COSTS	227	374	399

Table No. 3. 10

Unit Costs - Per Teaching Departments, University System, India
1974-75--77

AFFILIATING UNIVERSITIES

(AMOUNT IN THOUSAND RUPEES)

		Items of Costs/Years	1974-75	1975-76	1976-77
A.	OPERATING COSTS				
I.	Costs of Teaching Inputs				
	1)	Wage costs teaching staff	122	158	208
	2)	Costs of teaching material	27	26	35
	3)	Library costs	19	33	24
		TOTAL TEACHING INPUTS COSTS	168	217	269
II.	Costs of General Administrative and Supporting Services				
	1)	Wage costs - administrative staff	133	164	203
	2)	Costs of consumable stores supplies and other supporting staff	93	138	143
	3)	Costs of maintenance and repairs	8	18	18
		TOTAL COSTS OF GENERAL ADMINISTRATIVE SERVICES	234	320	364
		TOTAL OPERATING COSTS	402	537	633

costs in 1976-77 in affiliating universities was higher than in the residential type. In the first type the unit costs were Rs 633,000 against Rs 399,000 in residential type. The unitwise difference was almost Rs 234,000. This difference was mainly due to the higher unit costs on administration and supporting services. The unit costs on general administrative and supporting services in the affiliating type was Rs 364,000 compared with Rs 201,000 in the residential type. Within the unit costs of General & Supporting Services, the unit difference was mainly because of the higher wage costs of administrative staff in affiliating type compared with the residential type. Unit wage costs on administrative staff in these two types of universities accounted for Rs 203,000 and Rs 111,000 per department respectively.

Unit operating costs per teaching department in affiliating universities increased by Rs 231,000 whereas those of residential type by Rs 172,000. The relevant figures for these two types in 1974-75 were Rs 402,000 and Rs 227,000 respectively. In 1976-77, they were Rs 633,000 and Rs 399,000 respectively. The increase in unit costs of teaching inputs was Rs 121,000 and Rs 40,000 per department. The unit costs on General & Supporting Services increased by Rs 130,000 and Rs 32,000 the increase thus being more in affiliating types.

We may summarise that:

i) the unit costs of operating a teaching department were higher in affiliating universities; and
ii) unit costs on General & Supporting Services were higher in the affiliating type.

Conclusions

The following broad conclusions may be drawn from the unit costs study:

unit operating costs in Indian universities are nearly Rs 8600 per annum per student. The unit operating costs of providing education to students in affiliating universities are higher than those in residential universities. The difference in these two types was almost Rs 754 per student;

unit costs per student were higher in central universities than in general, and within general universities among affiliating and residential types. The difference was Rs 2000 per student, and this was almost double the unit costs of the residential type. In other words, providing education in central universities was costlier than that in state financed universities;

unit costs of administrative and supporting services in general universities and within the general type in the affiliating type, were more than the unit sts on teaching inputs and student welfare together. But in the residential pe of universities unit costs of teaching inputs and student welfare were gher than the unit cost of administrative and supporting services;

it costs on general administrative and supporting services in central uni- rsities were the highest. They were more than the unit cost in general d within general affiliating and residential types. They were also higher in costs of teaching inputs and student welfare together in this types. Thus illating and central universities spend more resources per student on ministrative and supporting services than on the main activity of teaching d research. Unit cost of activities in central universities was higher. This y be partly because they find resources easily obtainable and partly because y mainly provide postgraduate and research education, for which enrolment nber is small;

1976-77, compared with 1974-75, the unit operating costs of universities India increased by almost Rs 1353 per student. This was partly due to the nging wage structure of the teaching staff and rising prices of some con- nable stores. But it was also partly because students on the rolls of these versities declined in this period. As a result the capacity created in the versities was not fully utilised and unit costs per student went up;

costs of teaching inputs rose by Rs 556 per student in general universities, within general universities in the affiliating type Rs 608 and in the resi- tial type Rs 422.

s the increase was greater in the case of affiliating universities. Student are costs increased marginally both in the affiliating and residential type. ffiliating type these costs increased Rs 67 per student that in residential s 22 ;

s on the supporting and administrative services in general universities eased in 1976-77 Rs 735 per student compared with 1974-75. Within the ral in affiliating type unit costs increased Rs 804. The increase on ral administrative and supporting services in the residential type was Rs 367 per student. Thus the affiliating type spend more per student neral administrative and supporting services than the residential type.

igher unit costs per student on general and administrative services in ating and centrally financed universities call for an indepth analysis of orking of university administration. This is partly because this activity nted for more than the unit cost per student on the main activities of ing and research.

It is also necessary to find out the causes of wide variation in the unit operating costs of education in affiliating and central universities compared with the residential type.

Although part of higher cost in the affiliating type may be due to their responsibility to provide some affiliating services to colleges, such a wide difference cannot be said to be purely because of this additional activity.

Universities might be able to reduce the unit cost per student by carrying out administrative reforms as well as increasing enrolment either by providing undergraduate courses or through restructuring the academic courses so as to accommodate more students with varied interests.

Per unit cost of capital formation increased in almost all the universities in the period under study. In 1976-77, the unit cost of capital formation was higher in the affiliating type compared with the residential type. Per unit costs of capital formation were highest in central universities. In 1976-77, unit costs of capital formation in this type accounted for Rs 915. Per unit costs of capital formation in general universities was Rs 833, and within general universities it was Rs 868 in the affiliating type and Rs 688 in the residential type. The major part of capital formation expenditure was on constructing buildings in almost all types of universities, but for professional universities.

the unit operating costs of education in professional universities were almost thrice to that in general universities.

operating a teaching department in an Indian University in 1976-77 cost Rs 561,000 per annum. Unit costs of operating a teaching department were relatively less in the residential type, where they came to Rs 399,000 per annum.

CHAPTER IV

ECONOMIES OF SCALE & MINIMIZATION OF UNIT COSTS

Given the structure of costs and unit costs per student on education, how can unit costs be minimised? In a market economy, cost minimisation is effected through the price mechanism. In the absence of such a mechanism, there is no external agent which could impel institutions to minimise the unit costs of public services. Costs can therefore be reduced through an internal evaluation of the working of institutions providing public services. They can be minimised in various ways such as restructuring academic and administrative units through various alternative methods of education. Costs can also be minimised by operating the system at a certain size of enrolment.

Economies of Scale

Generally, certain educational infrastructure and services are provided to educate a certain number of students. When this number is enrolled in institutions the facilities created are fully used . In such a situation the unit costs of operating an institution are likely to be least. With enrolment below this number unit costs per student are likely to be high. Enrolment of students beyond this number also increases these costs. This is because the infrastructure and services needed is to provide education are not infinitesimally divisible. For example, a lecture hall cannot be created to accommodate five to ten students, and a teacher instructing this additional number of students would not accept a lower salary. The same holds true for laboratory and library and other facilities. A minimum level of expenditure is therefore necessary to create additional facilities. This would raise unit costs until the number of students enrolled increases to a level where additional facilities are fully utilised. But this process of expansion cannot continue indefinitely for two reasons: i) as the size of an institution grows problems of management also grow; ii) a larger number of students are not infinitely available given the location of an institution. Thus the unit costs of operating an institution are likely to be high beyond a certain size of enrolment. Hence under both conditions of smaller and larger numbers of students institutions will suffer from diseconomies of scale and unit costs per student will be high.

This phenomenon has been noted in manufacturing units, and some studies on educational institutions also reveal a similar situation. Although these institutions, unlike industries do not have homogeneous outputs the input costs of education could be related to size of enrolment. An attempt is made in this chapter to examine whether, given the educational technology and structure of a university, economies scale exist in running the university system. If so at what size of enrolment is it cost least?

To test scalar economies in the working of university system, the following pothesis may be formulated:

Per unit operating costs decline as enrolment increases, till the point where eated facilities are fully utilized. Unit costs per student increase with the increase the number of students beyond a certain enrolment size. That is to say, there is sort of U-shaped cost curve in providing higher education services. For the pur- se of cross- section analysis of annual unit costs per Student in universities with rious sizes of enrolment the hypotheses may be restated as follows:

Unit costs of education in universities with a small enrolment are higher d they decline as the institutions grow to a certain size, and beyond this size again it costs increases. Thus the unit costs per student are higher both in smaller d larger universities.

The economies of scale hypothesis is tested on the 1976-77 expenditure data a cross-section of 39 universities that were complete in all respect. The lower d upper limits of enrolment considered were 100 and 5000. Tests were made for al operating unit costs per student, and within this for activities like teaching and search, that is teaching inputs, student welfare and general administrative and pporting services.

This hypothesis is tested with the help of a non-linear function of the following m:

$$y = (a + bx_1 + cx_1^2)$$

(where y = expected unit costs per student, x_1 is size measured *in terms of enrolment, and b, c, are regression coefficients)*

This function is tested for the following activities

(1) Teaching inputs = y_1

(2) Teaching inputs and student welfare put together = y_2

(3) General administration and supporting services = y_3

(4) Teaching inputs, student welfare and general administration and supporting services put together = total operating costs. = y_4

The same may be described in the following form of equations:

$$y_1 = (a + bx_1 + cx_1^2) \quad 1.1$$

$$y_2 = (a + bx_1 + cx_1^2) \quad 1.2$$

$$y_3 = (a + bx_1 + cx_1^2) \quad 1.3$$

$$y_4 = (a + bx_1 + cx_1^2 \quad 1.4$$

Where unit costs per student are a function of size of enrolment x_1 and x_1^2.

The regression results of unit costs per student on teaching inputs and size of enrolment are given in table No 4.1. The R^2 is found to be a significant 0.01. level. That is to say that our hypothesis that there is a U-shaped cost curve in university education is supported by statistical evidence.

The optimum size of enrolment and the minimum cost point for this activity may be estimated from the following equation:

$$Y_1 = 3987.40992a - 1.745800x_1 + 0.000287x_1^2$$

The size of enrolment where the unit costs per student are estimated as least is 3043 students and the minimum cost is Rs 1332 per student per annum. Universities with such an enrolment level are working at the optimum level. Universities with enrolment more or less than this number are suffering from diseconomies of scale.

The regression results of unit costs per student on teaching inputs and student welfare put together are given in table No.4.2. It would be seen from the table that R^2 is significant in 0.01 level. The equation for the optimum size of enrolment and the minimum costs per student may be stated as follows:

$$y_2 = 5046.281250a - 2.394590x_1 + 0.000390x_1^2$$

Table No. 4.1

Regression Coefficients, Standard Error T Value of Enrolment (x_1 and x_1^2) on Per Unit Operating Costs of Teaching Inputs (y_1) for 39 Universities, University System, India, 1976–77

Name of Variable	Regression Coefficient	Standard Error	T. Value	Partial R^2
a	3987.410	563.891	7.07125	
x_1	1.745800	00.631098	-2.76630	.175303
x_1^2	00.000286905	00.000138221	2.07570	.106888

R^2 = .240535*

$\bar{R}$ = 0.198342

R = .490443

F. Value = 5.701

---

* 0.01 level of significance

Table No. 4.2

Regression Coefficients, Standard Error T Value of Enrolment (x_1 and x_1^2) on Per Unit Operating Costs of Teaching Inputs and Student Welfare together (y_2) for 39 Universities, University System, India, 1976-77

Name of Variable	Regression Coefficient	Standard Error	T. Value	Partial R^2
a	5046.28	712.396	7.08354	
x_1	-2.39459	.797302	-3.00336	.200358
x_1^2	.00039009	.000174623	2.23343	.121699

R^2 = 0.276132* $\bar{R}$ = 0.235917 R = .525482 F. Value = 6.866

---

* 0.01 level of significance

For both these activities put together the optimum size of enrolment is estimated at 3069 students and the minimum cost at Rs. 1337 per student per annum.

Regression results of unit costs per student on general administrative and supporting services are given in table No. 4.3. In this case R^2 is significant 0.01 level. The equation for the optimum size of enrolment and the minimum cost per student for this activity is:

$$y_3 = 12941.101563a - 8.21798x_1 + 0.001323x^2$$

The optimum size of the enrolment is estimated at 3105 students, and the unit costs are only Rs 181 per student.

The regression results of total unit operating costs per student and the size of enrolment are presented in table No 4.4. The table reveals that R^2 is a significant 0.01 level. About 41 percent of the variation in unit costs per student is explained by the size of enrolment. The equation for the optimum size of enrolment and minimum costs per student for total operating costs may be given as below:

$$y_4 = 17987.300781 - 10.61200x^1 + 0.0001713x^2$$

The optimum size of enrolment is estimated at 3097 students, and the minimum cost at Rs 1551 per student per annum. That is to say that universities with an enrolment of 3097 are realising economies of scale. Universities with enrolment either more or less than this number suffer from diseconomies of scale.

It may be concluded that universities with an enrolment of 3097 students, assuming other things are equal, are operating at optimum level and therefore realising the benefits of scale economies. Universities with more or less enrolments than this number are suffering from diseconomies of scale and therefore operating at an unoptimal level.

A study by James Maynard in the united States on institutions of higher learning revealed that "with between 500 and 5363 FTE (full-time equivalence) students, the per-student costs decline about $ 536. More than three - forths of this total decline has been realised by the time the school enrolls 3000 students, and about 92 percent is enjoyed when the institution has attained the level of 4000 FTE students." His findings are similar to ours although the study pertains to a different setup of higher learning. This indicates that the phenomenon of economies of scale is applicable to the education system irrespective of place and difference of system.

It may therefore be suggested that whenever a decision regarding enrolment in a university is made this finding should be kept in view. Economies can also be effec-

Table No.4.3

Regression Coefficients, Standard Error T Value of Enrolment (x_1 and x_1^2) on Per Unit Operating Costs of General Administrative and Supporting Services (y_3) for 39 Universities, University System, India, 1976-77

Name of Variables	Regression Coefficient	Standard Error	V. Value	Partial R^2
a	12941.1	1680.26	7.70180	
x_1	-8.21798	1.88052	-4.37005	0.346611
x_1^2	.001323160	.000411867	3.21258	0.222809

R^2 = 0.453641* $\bar{R}$ = 0.423288 R = .673529 F. Value = 14.945

*0.01 level of significance

Table No.4.4.

Regression Coefficients, Standard Error T Value of Enrolment (x_1 and x_1^2) on Total Per Unit Operating Costs (y_4) for 39 Universities, University System, India, 1976-77

Name of Variables	Regression Coefficient	Standard Error	T. Value	Partial R^2
a	17987.3	2167.11	8.30015	
x_1	-10.6126	2.4254	-4.37560	0.347186
x_1^2	.00171317	000.531204	3.22506	0.224155
R^2 = 0.452716*	$\bar{R}$ = 0.4223	R = 0.672842	F. Value = 14.890	

*0.01 level of significance

ted by consolidating universities in close proximity or in the same state. This would help them to use their resources more efficiently. It may however be pointed out that this optimum size is estimated on the basis of the present system of university education. If changes are effected in the structure or working of universities a similar study would be necessary to determine the optimum size of enrolment where unit costs per student per annum would be least.

James Maynard, Some Micro-economies of Higher Education: Economies of Scale, Lincoln, University of Nebraska Press, 1971. p. 101.

CHAPTER V

POLICY IMPLICATIONS & SUGGESTIONS

Over the last few decades the demand for social/public services has increase in all parts of the world and particularly so in the developing countries. This is partly because of increasing consciousness among people of the state's role in providing welfare and partly because of the fact that the level of services provided by the developing countries is relatively lower than available in the developed countries. The ability of individuals to pay for public services is limited because of the low per capita income. Because of the low level of development their governments also face scarcity of resources and therefore find it hard to expand public services in a linear direction. This al holds true of educational services which are largely provided by the state.

To fulfil popular demands, governments in the developing countries allocate considerable resources to expand these services. But in course of time they have found that it is almost impossible to allocate more resources for this purpose. The problem is further complicated by the fact that very little attention is paid in these countries to working out the short term and long term costs of these services so that resources can be deployed accordingly. Hardly any attention is paid to working out alternative methods of providing these services which might be less costly. In fact, there is lack of 'cost consciousness' among the governments of these countries. This is firstly because the system is not subjected to the imperatives of price mechanism, and secondly because the question of their public accountability has not been raised sharply enough so as to invite general attention. Even research studies in this field are limited in numbers and not particularly searching. As a result no concerted efforts have so far been made to examine the costs of providing public services, the education service in particular. Some studies in this field are revealing, but there is no systematic study, to our knowledge, that examines the university system and its costs. This study is an attempt in that direction.

System of University Education

There are as many as 82 general universities and 30 professional universitie in India and these have about 2400 departmental teaching units. Two-thirds of the system caters to general degree education, and one-third to professional education. The system is categorised in terms of (a) affiliating and residential types of universities, (b) central universities and (c) professional universities. The costs of education in these types are studied accordingly.

Structure of Costs

The study reveals that in 1976-77, 77-78 percent of the total university budgets in India were spent on operating expenses and 15 to 16 percent on capital formation. 7 to 8 percent was spent on scholarships and other items which are not the direct charge of the universities. Thus the major part of the budget is committed and only 15 percent is available for infra-structural development. Although prima facie it appears that there is little scope for adjusting costs, a detailed analysis suggests that there is much scope for doing so in order to effect economies in operation.

Operating Costs

Of the total operating budget almost half was allocated to administrative and supporting services and only one-third to teaching inputs. About 3 percent was spent on student welfare. This item includes scholarships, stipends and expenditure on sports, games and hostel facilities. Management of examinations accounted for 10-12 percent of operating costs.

Analysis of the operating costs structure indicates that administrative and supporting services have received greater importance than teaching activity (which is supposed to be the main activity of a university) in the working of the academic system. Even the wage costs of the administrative staff claimed resources roughly similar to the wage costs of the teaching staff. The proportion allocated under these heads is 25 percent and 27 percent respectively. It appears that over a period of time large administrative infrastructures have been built into the Indian Universities system.

Allocation of such a large proportion of the total budget to administrative and supporting services needs careful examination, particularly because the wage costs of the administrative staff was found to be similar to those for teaching staff. The higher costs on administrative and supporting services, which by definition are created to support the main activity of the institution, calls for a detailed examination of the administrative structure of the university system.

Residential and Affiliating Universities - A Comparison

An examination of costs structure in residential universities reveals that teaching inputs claimed a relatively higher proportion than in the affiliating type. The proportion of the budget allocated to administrative and supporting services in such universities absorbed arround 45 - 46 percent of the total operating budget. The wage costs of these services were less by almost 12 percent of those of the teaching staff.

The situation was just the reverse in the affiliating type universities, where the wage costs of administrative staff claimed almost as much of the operating budget as the costs of the teaching staff. Total administrative and supporting services in th type of university claimed more than the allocation for teaching inputs and student we fare together. In other words, a large and heavy administrative structure has been into this type of institution.

Management of examinations also claimed a relatively smaller proportion of the operating budget in a residential type of university as compared to that in the affiliating type. The larger allocation for the affiliating type may be due to the fact that examinations were conducted for a larger number of students than are to be found in residential type. But this activity does not have major implications for the financial management of universities because most of them conduct examinations at full cost price. Fees are charged from the students, and those go to meet the expenditure incurred on examinations.

Central Universities

Unlike the residential universities, administrative and supporting services the central universities claimed more than half of the operating budget. So much so that the proportion of operating budget allocated as wage costs to administrative staff was more than the proportion allocated to wage costs of the teaching staff. However, the amount allocated to examinations was not all that high. Another point of differenc was that the amount spent on student welfare was slightly more in central universitie than in others.

Operating Costs: Time Period Analysis

A comparison of the structural pattern of operating costs in 1976-77 with tha in 1974-75 revealed that the proportion of budget allocated to various activities had changed but slightly. The wage costs of teaching staff increased because the Universi Grants Commissions new scale of pay had been implemented in most universities by then. The amount spent on administrative and supporting services also increased but the amount spent on student welfare declined. Expenses on student welfare accounted for 4.5 percent in 1974-75 compared to 3 percent in 1976-77.

In the residential universities the proportion spent on teaching inputs increas whereas that on student welfare declined. Spending on administrative and supporting staff also increased. Inthe affiliating type of universities, the proportion allocated to teaching inputs and student welfare declined whereas that on administrative and suppo ing services increased.

Thus it appears that in the period under study the trend is towards creating still larger administrative and supporting services.

Structure of Operating Costs - General and Professional Universities

A comparison of cost structures of general and professional universities reveals that the amount spent on teaching inputs in professional universities was much higher than on administrative and supporting services. Teaching inputs and student welfare claimed slightly more than half the total operating budget whereas administrative and supporting services claimed around 43 percent. Allocation of teaching material in professional universities was relatively higher than that allocated by affiliating and residential type of universities.

Conduct of examinations in professional universities claimed about 1.7 percent of the operating budget while that spent under the same head in others was much higher. Relatively less was spent on examinations in professional universities because they followed the internal assessment and the semester system which do not claim so much of resources. The evaluation of students is done by faculty members and only nominal costs are incurred on examinations. Residential and affiliating universities might be able to reduce the costs of examinations by switching over to the periodical and internal assessment system of examinations. The new system by its very nature claims very little resources.

It may be stated that our suggestion if introduction of periodical and internal assessment in university system has distinct implications in respect of residential and affiliating types of universities. In residential types of universities it might be possible to introduce periodical and internal assessment without much disturbing the working of the universities because assessment of students can be carried out periodically by teachers who are teaching them. It would however, mean somewhat more work for the members of teaching staff. It would also mean that the teachers assessment is fully trusted and respected.

But it will have different implications for the affiliating type of universities which are conducting examinations for a number of students enrolled in affiliating colleges. The introduction of periodical and internal assessment in such universities would mean giving the responsibility of the assessment of students to the colleges and the universities doing away with the present system of conducting examinations for a large number of students at one place and once in a year. This would pose a number of problems namely, whether universities would be able to assign this responsibility to colleges, how would students respond to this change etc. ?

Capital Costs Strcuture

Of the total amount allocated to creating educational infrastructure, the major portion was spent on construction of buildings. This item accounted for half of the total capital budget. Machines and equipments and the library accounted for 16 and 12 percent respectively. 'Other items' that are not specified accounted for 16 percent. The structural pattern in the affiliating and the residential types universities was more or less the same, though the magnitude of amount spent by them varied. Over the period under study, the structure pattern was broadly the same though the magnitude of amount spent on these items changed slightly.

Unit Institutional Costs

Analysis of unit institutional costs reveals that in 1976-77 an average of Rs 3570 was spent per student per annum by the universities as operating expenses to provide instruction. About Rs 833 was spent on developing infrastructure of capital nature.

Unit operating costs of providing education in affiliating universities were higher than similar costs in the residential type, which spent almost Rs 754 per student less.

Unit operating costs in centrally financed universities were higher by Rs 2052 per student compared with those in state financed universities, and this amount was little less than double of that spent by residential universities. Here the question arises whether the higher per student cost in central universities is due to their different nature from other universities or it is because such universities are considered prestigious and more resources are allocated by the Central Government. What is important here is going into the whole issue of their working and seeing whether such higher costs are justified.

Another revealing finding of the study is that unit costs of administrative and supporting services in affiliating type of universities were more than those of teaching inputs and student welfare put together. In the residential type, the unit cost of teaching inputs and student welfare was relatively higher. As in affiliating universities, administrative services are extended to affiliated colleges and some part of the higher costs may be due to this factor. Even with due allowance to this factor, the higher per unit cost on this activity needs serious examination. This is particularly so because in an affiliating university wage costs per student(both of teaching staff and of administrative staff) are more or less equal.

This aspect needs more careful examination in central universities for two reasons. One, because wage costs of administrative staff was higher than wage costs of teaching staff and, secondly, because unit cost per student on administrative and supporting services was higher than in other universities.

Unit Costs Per Student - Time Period Analysis

General Universities

The time period analysis of unit cost reveals that, as compared to 1974-75, unit operating cost per student in 1976-77 increased by almost Rs 1347 per student. Although most of this increase was due to change in the wage structure of the teaching staff and in the price of some consumable stores and supplies, it was also due to the fact that the number of students in many universities declined in the last two years and the capacity created for a larger number of students therefore remained unused. This consequently raised the unit cost per student.

Affiliating and Residential Universities

A comparison of unit operating costs of affiliating and residential universities reveals that unit costs per student on teaching inputs increased much more in affiliating universities. In the affiliating type, unit costs per student increased by Rs 608 whereas that in residential type did so by Rs 422. The unit cost of student welfare in both types increased by Rs 22 and Rs 66 respectively. But the unit cost of supporting and administrative services in affiliating universities increased by Rs 804 per student while that in residential type increased by Rs 367 per student. This suggests that even though affiliating universities spent more on administrative and supporting services the trend is still towards further strengthening of administrative and supporting services.

Unit Costs Per Student - Professional Universities

Unit cost per student in professional universities was around Rs 10068 per student per annum. Compared with general universities this was higher by almost Rs 6500 per student. It only confirms what is generally known that it costs more to provide professional education to a student than general degree education or even professional education in general universities.

Unit Costs - Per Teaching Department

The operating cost of teaching department depends on the nature and size of the department. Cost of running a science department may be more than the costs of running a department of social sciences or humanities. However, given the different nature and size of the department, on an average, operating a teaching department unit in general universities requires about Rs 5,81,000 yearly. In residential and affiliating type of universities this cost works out to be Rs 3,99,000 and Rs 6,33,000 respectively. In planning for a department it may be kept in view that, on an average resources of this magnitude will be required. Whether the newly created department can enrol a sufficient number of student to justify this scale of expenditure also requires to be studied.

Economies of Scale and Minimization of Unit Costs

Per unit costs of operating a system becomes low when the capacity created in the system is fully used. In the educational institutions this would happen if the number of students enrolled are such that facilities created in the institutions are fully utilized. If the enrolment in that institution is below the number where facilities coul be fully utilized, the student cost of providing education becomes higher. The enrolment of students beyond the number where facilities tend to be fully utilized would also increase per unit cost. This is because the infrastructure and services needed to provide education are not infinitesimally divisible. A minimum level of expenditure is always necessary to create additional facilities. This would raise unit costs until the number of students enrolled increases to a level where additional facilities are fully utilized. Therefore unit costs of providing education beyond a certain size of enrolmen would be higher.

Analysis of unit costs per student and size of enrolment suggests that there exist economies of scale in running universities. The unit cost is the lowest at a particular level of enrolment. The unit cost data for 39 universities in 1976-77 suggests that in a given situation universities with an enrolment of 3100 students work at the optimum level and the unit operating cost is Rs 1550 per student per annum. Universities could save a great deal of resources by operating at this level. In terms of these findings, our university system is working at an inoptimal level. In a university operating with this size of enrolment the annual average cost per students would be almost half of what it is now in most universities. Thus the system of university education may be able to save a great deal of resources by increasing enrolment in most of the university departments to around 3000 students. At this level, given our education system, the created facilities would tend to be fully utilised and the per student cost of providing education would be the lowest possible.

There is a clear case for effecting economies in the university system by operating at the optimal level. Since most universities suffer from diseconomies of scale, the unit operating cost of education at an Indian university system is comparatively high. This finding should not only be seen as of theoretical interest. It has a great implication in respect of the resources made available to universities and their utilisation. Operating at a given size of enrolment would help utilise the available resources more efficiently, and the savings thus effected could be used to provide better educational inputs and for student welfare.

Policy Suggestions

Some of the broad policy suggestions emerging from the analysis may be mentioned now.

Size and Location of Universities

As a result of pressure of members and the desire of politically important eople to have universities in their own areas quite a few have been established in ecent decades in places where the universities have failed to develop the right kind f ethos. In establishing them, little attention was paid to whether the area where a niversity was to be established would attract sufficient number of students to enable hem to operate at the optimal level of enrolment or not. This omission has resulted n less than the optimal level of enrolment in several of them. Conditions worsened hen two or more universities were established either inthe same city or in a place here another university was situated nearly and provided similar courses. These niversities compete for students, and as a result many university departments have uch less enrolment than their planned capacity. Lack of detailed educational planning bout the feader sector of a university as well as popular desire to have a university n a particular areas has thus caused the system to operate at an inoptimal level.

The optimal level of enrolment estimated by this study is around 3000 students n a university. Most of them however have enrolments either above or below this umber. By operating at an optimum level, the universities would be able to reduce er unit operating costs by almost half of what they have to spend today. Since these niversities already exist it would not be possible to revoke past decisions. All that an be done in this situation is to attempt to consolidated the working of universities y appropriate planning. According to the latest UGC policy, new universities can be stablished only by its prior concurrence. But even the UGC has to go by certain ational criteria. What is suggested here is a contribution in that direction.

For the future, a policy on establishing new universities will have be evolved nd this would take into account social pressures or any similar factor as well as economic viability, that is to say whether a new university would be able to attract sufficient tudents. A new institution should not be a copy of those already existing in that area. f this is not done the new university would compete for students, and that would ultimately result in an inoptimal level of enrolment in both, new as well as old universities. n other words it is necessary to go into the whole issue of locating universities from e angle of availability of students and economic viability. It is true that other considerations such as student pressure, the prestige of socially important people/politicians hibits a rational decision based on operational efficiency and economic considerations. ut then we should realise at what price such decisions are made. Ultimately the public has to bear the cost of wrong decisions.

eed for Administrative Reform

The administrative structure of our universities has grown considerably in ize in recent years and claims a goodly portion of the resources. In fact it claims lmost half of the total operating budgets of the universities. In most universities e wage cost of persons engaged in administration is roughly the same as the wage cost of the teaching staff. In Central Universities it is even more than the wage cost of the teaching staff. In specific terms the per unit wage cost of the administrative staff in Central Universities was found to be Rs 177 per student more than the per unit wage cost of the teaching staff. Even universities which used to spend a relatively smaller portion on administrative activities are now showing a trend towards creating a bigger infrastructure. How this has come about is an old story by now. Most of the decisions taken in this direction were taken so as to solve an immediate problem confronting the universities rather than to improve the working of the universities. The social pressures behind all these decisions are clear and unmistakable. From the financial point of view however these decisions are not in the interests of the universities.

An important question here arises is that in a resource-scarce country, whether such social pressures should be allowed to operate which fritter away the limited resources. Can one think in terms of thwarting such pressures by way of either building public opinion or clearly pointing out the financial costs which such pressures would entail on the society? In fact there is a need for more studies to investigate how this large administration structure came into being. It may also be necessary to work out some norms about the proportion of funds that should go to the main activities of universities i.e. teaching and research and the proportion that should be allocated to administrative and supporting services. Whether this proportion should be 15 to 20 percent of the total budget or a some other figures of proportion are questions that need to be examined. These have to be decided after having done a thorough study of what is the most desirable system of administration and what proportion of expenditure should be allocated to it. The U.G.C. may also carry out some costs-effectiveness studies of the established institutions and find out how efficiently the available resources have been used. In brief, there is need for an indepth analysis of working of the administrative system in the universities of India.

Subsidizing Professional Education

The higher cost per student in the case of professional education is a well recognised fact all over the world. But the question that arises here is whether subsidisation of such high costs by the government is justified from the social point of view. In a situation where there is a shortage of trained manpower in the country and very few people offer professional courses, subsidization of costs may be fully justified. Society needs the services of such people and it gains much more than what it spends on them. But in a situation, where there is a surplus of such manpower and education is provided because of demand from students, one has to think whether subsidisation of costs should continue indefinitely. A proper policy in this situation should be that a higher tuition fee may be charged from students in professional courses provided they come from well to do socio-economic background. However education of students coming from relatively poor socio-economic background may be fully subsidised.

Subisdisation should not only be to the extent of tuition fee, but these students should also be given financial assistance for their maintenance.

A related aspect of this problem is that quite a good number of professionally trained people migrate to other countries. They do so because of scarcity of suitable jobs in this country as well as because other countries offer them better monetary reward. But in terms of its effect on society, the investment done on them tends to benefit the people of other countries than the people of the country who had invested in them. In this situation it might be appropriate to formulate a policy wherein such people are required to pay for the investment in them. This may be in the form of some educational levy on persons migrated to other countries.

In any case there is need for going into the issue of subsidisation of costs of professional education by the state exchequer because the benefits accrue largely to the individuals.

Student Welfare

With increasing enrolments and the share of salaries of teaching staff going up, less amount is now available for student services and student welfare. The data analysed shows clearly that the percentage has gone down in recent years. This ought not to happen. Student services are important. Even as it is, all these years much less has been spent on student services than was required. To further reduce the proportion of expenditure under this head because expenses have gone up elsehwere is to move in the wrong direction.

To neglect student services in this manner is neither constructive nor educationally sound. Student unrest has a number of dimensions, one of them being the feeling of being unwanted and neglected. In some of the advanced countries as much as 10% of the total budget is spent on student services. While it may not be possible to divert so much of our resources for this purpose, it stands to reason that student services are improved to some extent. As a matter of fact a kind of imbalance has developed in recent years. Teachers salaries have gone up and administrative services have also gone up. What has suffered in the bargain is the outlay on student services.

Effectiveness of the System

Costs are only one side of the coin. The other side is the effectiveness of the system. Given these costs, we have to see how effective the system is. In terms of the present structure, we observe that around 25-30 percent of the students enrolled or graduate, postgraduate and other degrees either drop out before they complete their courses or fail. Why there is such a large amount of wastage and drop-outs needs to be further investigated. A study conducted by this author[1] reveals that a large proportion of students in the institutions of higher education with 40 to 45 percent of marks at their higher secondary examinations invariably fail or drop out. So much so that even students with 60 percent of marks at higher secondary level deteriorate in their performance at the graduate level and about 15 to 20 percent of them fail or drop out. Why this happens is a matter for further enquiry. However our limited analysis suggests that students with poorer achievements at higher secondary level generally need special attention indeed remedial coaching to cope up with their education at the university level whereas students with better performance at the higher secondary stage need more of counselling services, and different type of courses to suit their interests. To make the system more effective, wastage needs to be reduced by way of in the first instance, finding out the causes of failures and, then, by providing remedial measures.

Another way to gauge the effectiveness of the system is to see its relevance in the given socio-economic setup: how effective is university education in producing young men and women to suit the economic, social and cultural requirements of the country. Approximately one-third of university graduates are unable to get jobs within 2-3 years of their having passed out. The rate of absorption even in the coming years is not likely to be higher. The economy is simply not able to generate the required number of jobs and hence the surplus produced by the universities. As is well known the private cost of university education in India is low. So a larger number of students enter the stream of university education than the economy requires.

Although unemployment is a problem linked with economic development, it is also true that for many years our universities have continued to provide education that was relevant in the early stages of development, when graduates could get administrative types jobs in the private or public sector. But with the changing socioeconomic conditions and saturation of the job market graduates now find it difficult to get jobs. This strongly points to the need for linking the university education system with the needs of the community. The structure of academic courses has to have a bearing on the changed socioeconomic setup and the regional economic needs. This necessarily requires changes in academic courses which would not only meet the present and future needs of the society but also attract a large number of students of different sections with different interests. This will enable institutions to enrol sufficient students and help them operate at an optimal level.

Alarming graduate unemployment is one aspect of the effectiveness of the present system. Yet another is closure of universities for months together in an academic session. Today, our universities present a scene of student frustration and restlessness. Some universities are closed for three-fourths of the academic session. If this is the situation obtaining in the country as a whole, one has to consider carefully before investing further resources in these institutions.

---

[1] Sharma, G.D. Elite in the Making - A study of Socio-Economic Background of Delhi University Students, AIU (to be published).

While the salaries of teachers have gone up steeply during recent years, no data with regard to the increased effectiveness and quality of teaching is available. Whether these have increased or not is a matter of conjecture. Perhaps it is even difficult to quantify. Nonetheless the fact remains that it is an important aspect of the problem and has to be attended to.

SELECTED BIBLIOGRAPHY

BOOKS

1. Association of Indian Universities, Delhi

   Research in economics of education India. Delhi, AIU., 1979: p.66

2. Bottomley, J.A. and others

   Cost and potential economies: Studies in institutional management in higher education, University of Bradford. Paris, O.E.C.D. (CERI), 1972, V, p.440.

3. Coombs, Philip H.

   World educational crisis: A systems analysis. New York, Oxford University Press, 1968. X, p.241.

4. Coombs, Philip H. and Hallak, Jacques.

   Managing education costs. London, Oxford University Press (1972). xvi, p.288.

5. Lakdawala, D.T. and Shah, K.R.

   Optimum utilization of educational expenditure in Gujarat. Ahmedabad, Sardar Patel Institute of Economic and Social Research, Ahmedabad, 1978. p.269.

6. Maynard, James

   Some microeconomics of higher education: Economies of Scale. Lincoln, University of Nebraska Press, (1971) xiv, p.186.

7. Mukerji, Kshitimohan.

   Study of the finances of the Calcutta University. Calcutta, Firma K.L.M., 1976. p.87.

8. Nanjundappa, D.M.

   Working of University Finance, Delhi, Sterling Publishing Pvt. Ltd., 1976. p.363

9. Panchmukhi, P.R.

   Economics of University Finances: Basic principles and practice. Dharwar, Centre for Multi Disciplinary Research, Karnatak Historical Research Society, 1977. xvi, p.245.

Sharma, G.D.

Elite in the Making - A Study of Socio-Economic background of Delhi University Students. AIU (to be published).

Wagner, Adolph.

Grundlegung der Politischem Dekonomie. (ed. ed. Leipziq, Winto, 1892-94).

Umans, Shelley.

How to cut the cost of education: New York, McGraw-Hill, (1973) p.262.

PERIODICALS

Lakdawala, D.T. & Shah, K.R.

Optimum utilization of educational expenditure in Gujarat and financing of Universities in Gujarat. Economic & Political Weekly, X(20); 17 May, 1975.

Sharma, G.D.

"Unit costs of education in a college of Delhi University". University News Vol. 17 (8); 15 April, 79:pp.212-7.

REPORTS:

India, Ministry of Education, Government of India,

Report of the Education Commission, 1964-66. Delhi, Ministry of Education, Government of India, 1966.p.

India, University Grants Commission.

University Teaching Department: A Report; Delhi, UGC., 1979.

India, University Grants Commission.

University Development in India: Basic facts and figures, 1972-73 to 1976-77. Delhi, U.G.C.

LIST OF GENERAL UNIVERSITIES

Univ. Sl. No.	Name of the University
	ANDHRA PRADESH
1.	Osmania University
2.	Andhra University
3.	Sri Venkateswara University
4.	University of Hyderabad
5.	University of Kakatiya
6.	Nagarjuna University
	ASSAM
7.	Gauhati University
8.	Dibrugarh University
	BIHAR
9.	Patna University
10.	Bihar University
11.	Bhagalpur University
12.	Ranchi University
13.	Mithila University
14.	Magadh University
	RAJASTHAN
15.	University of Rajasthan
16.	Jodhpur University
17.	Udaipur University
	GUJARAT
18.	M. S. University of Baroda
19.	Gujarat University
20.	Sardar Patel University
21.	Gujarat Vidyapith
22.	Saurashtra University
23.	South Gujarat University
	HARYANA
24.	Kurukshetra University
25.	Maharishi Dayanand University
	HIMACHAL PRADESH
26.	H.P. University
27.	Kashmir University
28.	Jammu University
	KARNATAKA
29.	Mysore University
30.	Karnataka University
31.	Bangalore University
	ORISSA
32.	Utkal University
33.	Berhampur University
34.	Sambalpur University
	PUNJAB
35.	Panjab University
36.	Punjabi University
37.	Gurunanak Dev Universit
	TAMIL NADU
38.	Annamalai University
39.	Madras University
40.	Madurai University
	DELHI
41.	University of Delhi
42.	Jamia Millia Islamia
43.	J.N.U.
	KERALA
44.	Kerala University
45.	Calicut University
46.	Cochin University

Univ. Sl. No.	Name of the University
	MADHYA PRADESH
47.	Saugar University
48.	Jabalpur University
49.	Vikram University
50.	Indore University
51.	Jiwaji University
52.	Ravishankar University
53.	Avdesh Pratap University
54.	Bhopal University
	MAHARASHTRA
55.	Bombay University
56.	Nagpur University
57.	Poona University
58.	S.N.D.T. University
59.	Marathwada University
60.	Shivaji University
	MEGHALAYA
1.	North Eastern Hill University
	UTTAR PRADESH
2.	Allahabad University
3.	B.H.U.
4.	Aligarh University
5.	Lucknow University
5.	Agra University
7.	Rurkee University
8.	Gorakhpur University
9.	Kanpur University
0.	Meerut University
1.	Garhwal University
2.	Kumaun University
3.	Kashi Vidyapith
4.	Bundel Khand University
5.	Rohil Khand University
	WEST BENGAL
77.	Visva Bharati University
78.	Jadavpur University
79.	Kalyani University
80.	Burdwan University
81.	Rabindra Bharati Universit
82.	North Bengal University

LIST OF PROFESSIONAL UNIVERSITIES

Univ. Sl. No.	Name of the University
	ANDHRA PRADESH
1.	Andhra Pradesh Agricultural
2.	J. N. Technology & Agriculture
3.	Central Institute of English & Foreign Languages
	ASSAM
4.	Assam Agricultural
	BIHAR
5.	K. S. Darbhanga Sanskrit
6.	Rajendra Agricultural
7.	Indian School of Mines
	GUJARAT
8.	Gujarat Ayurved
9.	Gujarat Agricultural
	UTTAR PRADESH
10.	C. S. A. University of Agricultural
11.	Sampurnanand Sanskrit
12.	G. B. Pant Agricultural
13.	Gurukul Kangri
14.	Narendra Dev University of Agri.
	WEST BENGAL
15.	Bidhan Chandra Krishi Vidyalaya
	HARYANA
16.	Haryana Agricultural
	KARNATAKA
17.	University of Agricultural Sc

Univ. Sl. No.	Name of the University
	KERALA
19.	Kerala Agricultural Univ
	MADHYA PRADESH
20.	Indira Kala Sangit Vidya
21.	J. N. U. Krishi Vidyalaya
	TAMIL NADU
22.	Tamil Nadu Agricultural
23.	Gandhi Gram Rural Insti
	RAJASTHAN
24.	B. I. T. S., Pilani
	ORISSA
25.	Orissa University of Agr Technology
	PUNJAB
26.	Punjab Agricultural Univ
	MAHARASHTRA
27.	Tata Institute of Social S
28.	Konkan Krishi Vidyapith
29.	Marathwada Krishi Vidya
30.	Punjabrao Krishi Vidyap
31.	Mahatma Phule Krishi V
	DELHI
32.	Indian Agricultural Rese Institute